DIGITALISATION OF THE BANGLADESH TAX SYSTEM

The Next Frontier for Higher Resource Mobilisation

Mustafizur Rahman
Isabela Mumu Rozario

Global Gateway

Funded by the European Union

CENTRE FOR POLICY DIALOGUE

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Abstract

Efforts aimed at raising Bangladesh's dismally low revenue-GDP ratio have been many, and these have continued over many years. However, the fact remains that Bangladesh has the unique distinction of being the country with one of the lowest revenue and tax-GDP ratios in the developing world. The country's taxation system is also regressive - about two-thirds of the revenue is generated through indirect taxes. As it is, the revenue-GDP ratio has indeed come down further over the last decade (from 10.9% to 8.3%). Whilst the importance of fiscal reforms and administrative restructuring cannot be denied, this paper has argued that if domestic revenue mobilisation through taxation is to be significantly raised, the technical solution of digitalisation of the country's taxation system deserves to be given the highest priority by the policymakers. The estimates presented in the paper indicate that digitalisation could help Bangladesh increase the revenue-GDP ratio significantly over the foreseeable future. Indeed, as the estimates indicate, drawing on global experience, through comprehensive modernisation, automation and digitalisation, the amount of revenue could be increased from the current USD 48.0 billion to USD 195.0 billion in seven years. However, targeted investment will need to be made and appropriate measures will have to be put in place if the potentials are to be materialised on the ground. The study shows that as far as Bangladesh was concerned, potential dividends in terms of higher revenues could be reaped in a highly cost-effective manner. In other words, the resource to be spent in investing in modernisation and digitalisation of the taxation system promises to be good value for money. The study reviews the earlier efforts in Bangladesh in the areas of digitalising the taxation system, and identifies the reasons why majority of such initiatives failed to deliver the expected results. The paper maintains that it is important to adopt broad-based modernisation and comprehensive automation of various components of the taxation system, in a strategic way. This would call for ensuring interoperability of systems that are deployed by various elements of the taxation system (software alignment), using frontier tools such as artificial intelligence, enabling reconciliation of income and expenditure information to deter tax avoidance and tax evasion and taking due care of the online security issues. Against this backdrop, the paper points out that, on its part, the NBR will need to carry out the long-awaited institutional reforms in tandem with the digitalisation initiatives in order for the efforts to be successful.

About the Authors

Professor Mustafizur Rahman is Distinguished Fellow at the Centre for Policy Dialogue (CPD), Dhaka where he previously served as the Executive Director. Earlier Professor Rahman had taught at the University of Dhaka. Dr. Rahman was educated at Moscow State University from where he did his Ph.D., at Oxford University, UK and Warwick University, UK where he was a Post-Doctoral Fellow and at Yale University, USA where he was a Senior Fulbright Fellow. His recent works have focused on challenges of macroeconomic management in Bangladesh, LDC graduation challenges, issues of SDG implementation in developing country contexts, and regional and global integration of Bangladesh. His works have been published by reputed publication houses such as Routledge, Hart, Springer, McMillan, Tata-McGraw-Hill Publication and others, as also in reputed journals. He has served as member of several national bodies set up by the Government of Bangladesh including the WTO Advisory Committee, Regulatory Reforms Commission and Core Committee on Connectivity. He was a member of the Panel of Economists for Sixth and the Seventh Five Year Plans and 'Bangladesh Vision 2041' and is a member of Panel of Economists for the ongoing Ninth Five Year Plan of Bangladesh. He is a member of Dhaka University Senate and Board of Trustees of BRAC University. Dr. Rahman is one of the Series Editors of South Asia Economic Policy Studies published by Springer. Dr. Rahman is a member of the White Paper Committee set up by the Interim Government.

Isabela Mumu Rozario is pursuing a Master of Arts in International Economics and Finance (MIEF) at Johns Hopkins University School of Advanced International Studies (SAIS). She has received the Aga Khan Foundation International Scholarship and conducted research on the impact of foreign aid on economic growth in developing countries.

Her professional background includes roles in financial analysis, policy development, and research. At Quantum Financial Advisors, she focused on business development, financial planning strategies, and market trend analysis. Previously, as a Program Associate at the Centre for Policy Dialogue, she contributed to a roadmap for transforming Bangladesh's taxation system, a project funded by the European Union, aimed at improving operational efficiency and compliance.

Isabela also serves on the executive board of the South Asia Society at SAIS, reflecting her engagement in academic and community initiatives. Her technical skills include proficiency in STATA, R, and Microsoft Excel, which support her work in economic research and analysis.

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The national dialogue to discuss an earlier draft of this study, held in May, 2024, brought together representative of key stakeholder groups including high level policymakers, NBR officials, business representatives, and non-state organisations and fiscal activists. To all of them, the team would like to express their deep gratitude for sharing their views, comments, critical observations and experience, and for coming up with important suggestions which have enriched the study.

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Acronym

ABFY	Actual Budget Fiscal Year
ADB	Asian Development Bank
ADP	Annual Development Plan
AI	Artificial Intelligence
API	Application Programming Interface
ASYCUDA	Automated System for Customs Data
BB	Bangladesh Bank
B-COM	Border Customs Operations Management
BDT	Bangladeshi Taka
BEZA	Bangladesh Economic Zones Authority
BFY	Budget Fiscal Year
BIDA	Bangladesh Investment Development Authority
BITAX	Bangladesh Integrated Tax Administration System
BoP	Balance of Payment
BSEC	Bangladesh Securities and Exchange Commission
CEPA	Comprehensive Partnership Agreement
CMP	Comprehensive Modernisation Plan
COTS	Commercial Off-The-Shelf
CPD	Centre for Policy Dialogue
DCH	Detained Cargo Handling
DRM	Domestic Resource Mobilisation
DSP	Digital Software Providers
DVS	Document Verification System
E-BIN	Electronic Business Identification Number
EFD	Electronic Fiscal Device
EFDMS	Electronic Fiscal Device Management System
ETCA	Economic and Technical Cooperation Agreement
e-TDS	Electronic Tax Deduction at Source
E-TIN	Electronic Tax Identification Number
EY	Ernst & Young Global Limited
FRC	Financial Reporting Council
FCDO	Foreign, Commonwealth and Development Office
FTA	Free Trade Agreement
FTA	Forum on Tax Administration
FY	Fiscal Year
FYP	Five-Year Plan
GDP	Gross Domestic Product
GED	General Economics Division
GNI	Gross National Income
GoB	Government of Bangladesh
iBAS	Integrated Budget And Accounting System

ICAB	Institute of Chartered Accountants of Bangladesh
ICT	Information Communication Technology
IDRA	Insurance Development & Regulatory Authority
IEG	Independent Evaluation Group
IFC	International Finance Corporation
IMED	Implementation Monitoring and Evaluation Department
IMF	International Monetary Fund
IRD	Internal Resources Division
IT	Information Technology
IVAS	Integrated VAT Administration System
LDC	Least Developed Countries
LIC	Low-Income Country
LMIC	Lower Middle Income Country
LTU	Large Taxpayers Unit
MAP	Modernisation and Automation Project
MIST	Management Information System of Taxation
MLTRS	Medium to Long Term Revenue Strategy
MoF	Ministry of Finance
MoU	Memorandum of Understanding
NBR	National Board of Revenue
NID	National Identify Number
NOC	No-objection Certificates
NSW	National Single Window
OECD	Organisation for Economic Co-operation and Development
PAN	Personal Account Number
PFM	Public Finance Management
POS	Point of Sales
PPG	Public and Publicly Guaranteed
PPP	Public-Private Partnership
RBFY	Revised Budget Fiscal Year
RIRA	Reforms in Revenue Administration
RJSC	Registrar of Joint Stock Companies
SAP	Systems, Applications, and Products
SDC	Sales Data Controller
SDP	Strategic Development Plan
SGMP	Strengthening Governance Management Project
SZZT	Shenzhen Zhongtai Technology Co., Ltd.
TACTS	Tax Administration Capacity and Taxpayer Services
TDS	Tax Deduction at Source
TIN	Tax Identification Number
TRP	Tax Return Preparer
UK-DFID	United Kingdom's Department for International Development
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
USD	United States Dollar

VAT	Value Added Tax
VIP	VAT Improvement Programme
VOP	VAT Online Programme
VPN	Virtual Private Network
WB	World Bank
WTO	World Trade Organization

Section 1: Motivation and Relevance of the Study

Soundness of public finance management (PFM) and issues of raising the efficacy of PFM and ensuring fiscal sustainability have emerged as urgent tasks confronting Bangladesh's policymakers in the present context. Both issues of domestic resource mobilisation (DRM) and efficiency of allocation and utilisation of the mobilised resources (public expenditure) merit in-depth examination against this backdrop. Given the importance of the attendant challenges, as part of its research programme, CPD conducted a number of studies titled *Towards People-Centric Public Finance Management (PFM) in Bangladesh*. The programme was supported by the European Union. Research work under CPD's PFM programme was carried out under two streams. Two thematic studies were carried out under the resource mobilisation stream[1]. The first paper was titled *Taxation of the Digital Economy in Bangladesh* which dealt with issues of tapping into an emerging potential source of revenue generation in Bangladesh- the digital economy. This paper focuses on the theme of *Digitalisation of the Taxation System in Bangladesh*[2] .

In the backdrop of the low levels of resources mobilised from tax and non-tax sources, the present paper's point of departure is that digitalisation of Bangladesh's taxation system could be the next defining frontier for purposes of raising the level of the country's revenue earnings. While several attempts have been made towards digitalising the taxation system in Bangladesh, the paper argues that the country's policymakers ought to address the attendant deficits and challenges head on, and need to put greater emphasis on the use of digital tools for higher domestic resource mobilisation.

Objectives of the present study are the followings: (a) make a case as to why, in the current context, digitalisation of the Bangladesh taxation system has emerged as an urgent task before the country's policymakers; (b) undertake a review of the initiatives taken by concerned authorities, particularly the national board of revenue (NBR), in areas of digitalisation and modernisation of the country's taxation system; (c) assess the progress made in areas of digitalisation, identify the attendant challenges and bottlenecks, and shed light on what has worked and what has not worked and why; and (d) recommend appropriate measures in going forward towards a modern, automated and fully digitalised taxation system in Bangladesh.

It needs to be conceded that digitalisation will not be able to address all the problems that underpin the current low DRM in Bangladesh; other measures such as tax reforms and administrative overhaul of the taxation system will also need to be undertaken in order for the digitalisation efforts to succeed and to generate the desired results in terms of higher revenue earnings. However, there is no denying the fact that digitalisation could go a long way in strengthening the country's tax efforts and ensuring better tax outcomes, and thereby helping raise Bangladesh's revenue earnings significantly.

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[1] As part of the second stream of the PFM study programme, two studies were planned to be prepared: *Property Taxation* which has been completed and presented at a National Dialogue organised by the CPD on 24 May, 2024. The second study, currently being prepared, is titled *Assessing the Viability of Universal Basic Income in Bangladesh*.

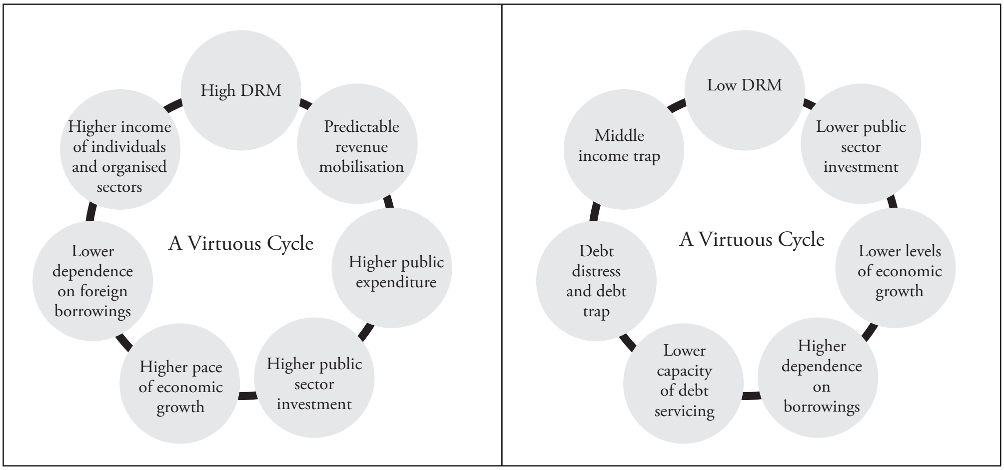
[2] The findings of the study were presented at a dialogue on 19th May 2024. High level policymakers and key stakeholders attended this event. Valuable comments, feedbacks and suggestions offered by the participants have contributed significantly to enriching the current revised version of the study.

Following the above introductory remarks, Section 2 highlights the context of the discourse and presents some stylised facts to show that in spite of the government's declared consistently high GDP growth[3], Bangladesh had lagged behind in mobilising domestic revenue from tax and non-tax sources. Section 3 presents an estimation of the potential benefits in terms of additional revenues that could be accrued from digitalisation of Bangladesh's taxation system. Section 4 presents an assessment of tax digitalisation and modernisation initiatives undertaken by concerned entities in Bangladesh over the past years. Section 5 offers a number of recommendations towards greater domestic resource mobilisation through comprehensive digitalisation, automation and modernisation of the Bangladesh's taxation system.

Section 2: The Urgent Need for Accelerating DRM in Bangladesh

The Urgency of Higher DRM

Figure 1: The Overriding Importance of Strengthening DRM



Source: Authors' illustration

A high level of DRM is important for developing countries such as Bangladesh for several reasons: to have greater amount of resources at hand to underwrite the growing demands of the public sector expenditure, including public sector investment; to ensure a more equitable income distribution; to reduce dependence on domestic and external borrowings by the government with a view to keep debt servicing obligations under control and forestall the likelihood of debt distress[4]. Low levels of DRM results in relatively low amount of public expenditure being spent on critically important areas such as education, health,

[3]The high growth of GDP, propagated by the government of Sheikh Hasina, has come under scrutiny following the fall of her government in August 2024. For more details, please see the White Paper (GoB, 2025) prepared at the initiative of the Interim Government which assumed power following the student-citizens uprising of July-August 2024 against the government of Sheikh Hasina.

[4]Bangladesh's revenue-GDP ratio, as was noted, stood at about 8.2% in FY 2023-24. With fiscal deficit being equivalent to about 4.0-5.0% of the GDP, public expenditure remains rather low, at 13-14% of the GDP.

poverty alleviation, social safety net, food and nutritional security and social and economic infrastructure, among others (Mullins & Liu, 2020). This state of affairs undermines not only current development, but also constrains future growth prospects of the country. As Fig. 1 indicates, while higher amount of revenue could create a virtuous cycle of development, a lower amount could result in debt distress and undermine Bangladesh's growth prospects significantly. Indeed, low DRM may trigger a process whereby the country could fall into the dreaded (low) middle-income trap.

The Dynamics of Revenue-GDP Ratio in Bangladesh

Bangladesh's low Tax-GDP and Revenue-GDP ratios[5] have attracted increasing attention in concerned circles, including the development partners (ADB, 2022; World Bank, 2024; OECD, 2024). The question being posed is why a country that has achieved purportedly such impressive GDP growth has continued to mobilise such dismally low levels of DRM. This remains a puzzling surprise for many. However, as will be seen later, this is not so. Tax evasion and tax avoidance continue to remain pervasive, there is widespread corruption in the taxation system, and Bangladesh has not been able to do the needful to take advantage of the modern tools that are available to mobilise higher revenue earnings[6]. Even if the inflated GDP growth figure is taken into cognisance (as was noted earlier), such low levels of DRM is hard to explain. It is in this backdrop that issues and opportunities of digitalisation of Bangladesh's taxation system deserve closer attention from both analysts and policymakers.

Table 1: Resource Mobilisation Trends in Bangladesh (FY 2010-FY 2024) as Share of GDP

FY	2010	2019	2020	2021	2022	2023	2024*
Tax Revenue	9.05	8.91	7.94	8.51	7.54	7.38	8.99
NBR Tax Revenue	8.65	8.62	7.73	8.32	7.37	7.20	8.59
Direct Tax	2.35	2.65	2.70	2.75	2.42	2.41	3.06
Indirect Tax	6.30	5.97	5.03	5.57	4.95	4.79	5.53
Non NBR Tax Revenue	0.40	0.29	0.21	0.19	0.17	0.18	0.40
Non Tax Revenue	1.94	1.02	1.57	1.86	0.88	0.88	1.00
Total Revenue	10.99	9.93	9.51	10.36	8.43	8.26	999* (8.2)

Source: Ministry of Finance, Budget in Brief (FY 2011- FY2024), Monthly Fiscal Report (December 2023), Bangladesh Economic Review (2023)

*Figure for 2024 is projected. However, the actual figure turned out to be much lower (8.2%) as noted in the parenthesis.

[5]Revenue income includes earnings from both direct and indirect taxes and non-tax revenue.

[6]In the paper titled Taxation of the Digital Economy, mentioned earlier, it was pointed out that while digital economy-related activities (e-commerce, F-commerce, freelancing, Business Process Outsourcing etc.) have been on the rise in Bangladesh, this segment of the economy has remained mostly out of the tax net.

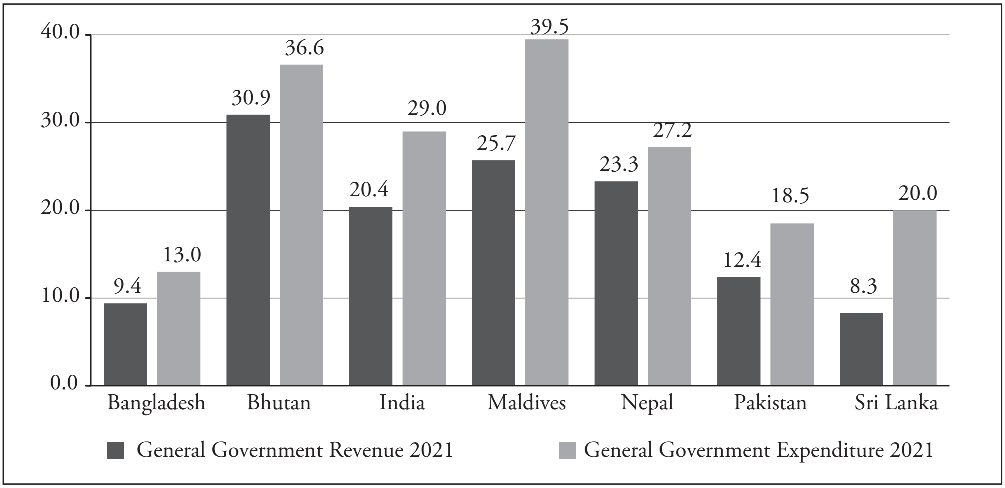
As a matter of fact, Bangladesh's Revenue-GDP ratio has come down in recent past years as can be seen from Table-1. The target for FY 2024, set at 9.9%, could not be achieved. At a time when real GDP growth rates had averaged more than 6.5% per annum over the past one and half decade, revenue collection failed to match the (nominal) GDP growth[7] , leading to the declining revenue-GDP ratio.

To recall, in the 7th Five-Year Plan (2015-2020), the target for domestic revenue mobilisation at the end of the Plan period, 2020, was set at 16.0% of the GDP (IRD, n.d.). With the envisaged budget deficit equivalent to about 4.0%-5.0%, the Public expenditure was set at 21.1% of the GDP for the year FY 2020. Even after four years, Bangladesh is far off those lofty targets[8]. To note, if the 7 FYP target of revenue-GDP ratio was achieved, and maintained thereafter, the entire public expenditure for FY 2024-25, that included both the revenue expenditure and the public expenditure (i.e., Annual Development Programme-ADP), could have been financed by domestic resources, indeed leaving significant budget surplus[9]!

It is also to be noted that, indirect taxes constitute two-thirds while direct taxes account for only one-third of the total revenue collected in Bangladesh (Razzaque et al., 2024). Such a composition of earnings from taxes is also rather regressive since indirect taxes are primarily paid by the common people.

Falling behind regional comparators

Figure 2: Revenue and Public Expenditure of South Asian Countries (for 2021; as share of GDP)



Source: International Monetary Fund, World Economic Outlook Database (April 2024)

[7] Nominal GDP growth averaged more than 11.0 percent over the corresponding period.

[8] With fiscal deficit being restrained to about 4.0-5.0% of the GDP, public expenditure remains rather low, at about 14.0% of the GDP.

[9] In FY 2024-25 Budget, public expenditure has been set at about 15% of the GDP with the fiscal deficit equivalent to about 5% of the GDP.

Fig 2 presents a comparative picture of revenue-GDP ratio of South Asian countries. Barring Sri Lanka (a special case in view of the country's recent sovereign debt default), Bangladesh has the lowest revenue-GDP and public expenditure- GDP ratios in the region (as also in the developing world). To note, while Bangladesh's revenue-GDP ratio has tended to decline in recent years, that of Sri Lanka has experienced a rebound over the last couple of year[10]. If Bangladesh was able to generate revenue-GDP ratio similar to, for example, Bhutan, Nepal or even India, the country would be able to raise the public expenditure significantly. Consequently, the level of domestic and foreign borrowings would have been much lower.

Higher Dependence on Borrowings

The Significantly low levels of DRM means that there is hardly any surplus in Bangladesh's revenue budget. As a matter of fact, all the revenue income goes to meet revenue expenditure of the country. Consequently, as was noted earlier, the ADP of Bangladesh has to be financed by either domestic or foreign borrowings. Not surprisingly, the country's public and publicly guaranteed (PPG) debt obligations and debt servicing liabilities have experienced notable rise in recent past years.

Table 2: Budget and Repayment of PPG Debt Obligations

(in crore taka)

Indicator	BFY24	RBFY23	BFY23	AFY22
A. Total Revenue Receipt	500,000	433,000	433,000	334,641
B. Operating Recurrent Expenditure	436,247	390,085	373,242	307,725
C. Revenue Surplus (A-B)	63,753	42,915	59,758	26,916
D. Other Public expenditure except ADP	54,552	35,420	51,027	19,369
Of which, Foreign Interest	12,376	9,322	7,200	4,554
E. Revenue Surplus after all expenditures other than ADP (C-D)	9,201	7,495	8,731	7,547
F. Foreign Debt Repayment (Principal amount)	24,700	18,150	17,000	13,302
G. Revenue Surplus after all expenditures and foreign debt repayment other than ADP (E-F)	(15,499)	(10,655)	(8,269)	(5,775)
H. Net domestic Borrowing	155,395	140,425	147,335	115,216
I. Total Foreign Borrowing for ADP	123,104	97,796	108,000	74,716
J. Total ADP Financing (G+H+I)	263,000	227,566	246,066	184,177

Source: Reestimated by authors.

10 Sri Lanka's low revenue-GDP ratio for 2021, as depicted in Figure 1, is a reflection of the macroeconomic challenges facing the country prior to its debt default in April, 2022. Since then, the Sri Lankan economy has somewhat rebounded.

Bangladesh's fiscal budget is presented in a way that the public expenditure part in the revenue budget shows only the interest component against the PPG debt incurred on account of domestic and external debt[11]. Expenditure on account of the principal amount is not shown in the revenue budget. This is clearly borne out by the data presented in Table 2. Had the principal component of debt repayment (the amortised amount) been also included in the revenue expenditure, the balance in the revenue budget would have been negative by a large margin.

Data in Table 2 also imply that debt servicing on account of the principal amount is actually being paid from the borrowed money. If one considers the principal amount component of the external debt servicing for FY 2022-23, to the tune of Tk 24,700 crore, one does not fail to observe that the revenue surplus shown in the Budget (9,201 crore taka) is not actually a *real surplus*. If this amount is added to revenue expenditure, there would actually be a deficit of Tk. 15,499 crore in the revenue budget. And this is so if only the principal amount for the external component of the PPG debt is taken into consideration. If the payment of the principal amount on account of the domestic borrowings was also included in this, the deficit in the revenue budget would have been significantly higher.

The Issue of Tax Expenditure

It is sometimes argued that one of the reasons for Bangladesh's low Revenue-GDP ratio is explained by the large amount of *tax expenditure*. This is defined as various tax incentives, exemptions and waivers etc. extended to different sectors, industries, and individuals. While there is some truth in it, this does not tell the full story. Many developing countries, having the same size of the economy as Bangladesh, have significantly high revenue-GDP ratio in spite of the large size of tax expenditure in place. To note, one of the key objectives of the tax expenditure is to help domestic industries, enterprises, businesses and start-ups to grow and become competitive. This then should create opportunities for higher revenue collection from the benefitted entities, at a later stage, through direct and indirect taxes. Such exemptions in most cases have *sun set clauses* (end-timeline for phase-out), while new incentives are added from time to time in view of the evolving demands of the economy. India is a pertinent example in this connection: India's tax expenditure has come down notably (as a share of GDP) in recent years, while the country's Revenue-GDP ratio has gone up significantly in spite of this (EY India, 2023). In large part, this has been so because the exempted sectors subsequently emerged as new sources of taxation.

Revenue Received by NBR < Revenue Paid by Taxpayers

One issue which is often not given due importance in revenue-related discourse concerns leakages in the taxation system through corruption. Evidently, the exchequer does not receive the full amount of the taxes paid on the ground by the taxpayers. In many countries,

[11] To note, interest payment for domestic and external debt in Bangladesh's budget for FY 2024-25 is the single largest expenditure item, surpassing the expenditure on education which had traditionally occupied the first place.

Bangladesh included, corruption in the taxation system remains rampant. Leakages from the system through corrupt practices, tax avoidance and tax evasion, use of loopholes, interpretative ambiguities, political pressure and pressure from vested interest groups remains very high (Chowdhury & Aman, 2023). Consequently, revenue received by the government is significantly lower than the actual amount of revenue paid by the taxpayers. It is argued in the paper that digitalisation of the taxation system, by raising tax efficiency, and by reducing human interface, could significantly reduce the level of corruption, and hence ensure that a substantial part of the leakages from the taxation system could be reduced.

Targets Under the IMF Loan

Raising Revenue-GDP Ratio has become even more urgent for Bangladesh owing to the targets that will need to be met as part of the IMF's 4.7 billion balance of payment (BoP) support extended to Bangladesh[12] . There are concrete targets including with respect to Revenue-GDP ratio which will need to be achieved for release of successive tranches of the IMF support. For example, as part of the IMF conditions, Bangladesh will need to raise its revenue by 0.5 percent equivalent of the GDP annually over IMF's lending period.

Table 3: IMF's Tax Roadmap for Bangladesh

	Estimated		Projection			
Indicators	**FY 21**	**FY 22**	**FY 23**	**FY 24**	**FY 25**	**FY 26**
Total revenue and grants	9.4	8.7	8.8	9.3	9.7	10.3
Of which: Tax revenue	7.6	7.8	7.8	8.3	8.8	9.4

Source: (IMF, 2023a)

Furthermore, according to IMF Country Report (IMF, 2023a), Bangladesh will need to increase the number of registered taxpayers to 10 million by 2026. 300 thousand EFDs will need to be installed over the next five years. Bangladesh will need to move towards a modern IT-based administration for the VAT and income tax systems and strengthen compliance risk management.

As may be recalled, Bangladesh was not able to reach the revenue target agreed under the IMF programme, for FY 2022-23. There is likely to be a shortfall in revenue collection to the tune of about BDT 50-60 thousand crore in FY 2023-24[13] . As a matter of fact, revenue-GDP ratio is likely to come down further. An ambitious target of Revenue-GDP ratio of 9.7% has been set for FY 2024-25. In all likelihood, this is not going to be achieved.

[12] In view of the deteriorating BoP situation and declining foreign exchange reserves, Bangladesh had sought BoP support from the IMF in January 2023. The loan that was negotiated came with a number of time-specific targets. Release of funds under the various tranches are subject to meeting two types of conditions: seven are linked to performance criteria and the rest are related to structural benchmarks. Some of these conditions are related to modernisation and reforms of the taxation system and revenue-GDP target.

[13] The actual figures for FY 2023-24 will be available towards October 2024.

Implications of Dual Graduation

Bangladesh's Dual Graduation will also have implications for DRM[14] . Following graduation from the group of the LDCs, Bangladesh will be a (non-LDC) developing country member of the WTO. Hence the country will not be able to impose many of the import duties currently in place (e.g. regulatory duties, tax deducted at source, import VAT, advance income tax) since such duties would no longer be permissible under the WTO rules. This is likely to lead to a decline in the share of customs duties in the total revenue. Bangladesh will need to go for signing various bilateral and regional agreements to offset the lost benefits accruing from preferential market access and with a view to strengthen regional integration as part of the sustainable LDC graduation strategy. Signing of trade agreements such as free trade agreements (FTAs), economic and technical cooperation agreements (ETCAs) and comprehensive partnership agreements (CEPAs) will mean that Bangladesh will, on its part, also have to provide preferential market access to its partner countries (on the basis of full reciprocity, or, at the best, less than full reciprocity). All these call for raising the efficacy of tax management and a search for new avenues of taxation. Bangladesh's middle income graduation has already resulted in higher costs of external borrowings in recent years with sharply declining share of concessional loans in the total external borrowings portfolio. Higher DRM has emerged as a necessity also in view of reducing dependence on the high-cost borrowings.

All the above indicates the urgent need for renewed efforts towards additional tax mobilisation by raising tax efficiency and productivity. In view of this, in the prevailing context, investing in appropriate tools for mobilising more revenue has emerged as an urgent task before the policymakers of Bangladesh. As noted, the present study argues that one of the central strategies in this connection should be to go for modernisation and comprehensive digitalisation of the country's taxation system.

Section 3: Returns on Investment in Digitalisation

It goes without saying that efforts at digitalisation and modernisation entail investment of considerable amount of resources. However, if the potential benefits in the form of additional revenues to be generated by spending resources on digitalisation are higher than the costs involved, then such investments are, without doubt, well-justified. As it is, the returns are found to far outweigh the initial investment.

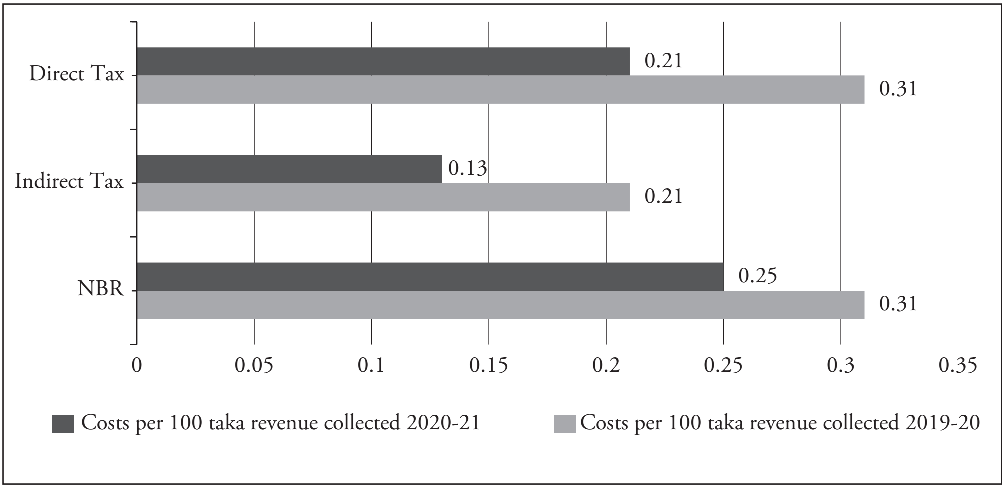
Investment in Tax Digitalisation is Good Value for Money

It is interesting to note that the potential increase in tax collection by spending an additional unit of money, through various measures including digitalisation of the taxation system, is found to be the highest for Bangladesh among the developing countries.

The Medium-Term Macroeconomic Policy Statement FY (2023-24 to FY 2025-26) of the Bangladesh Ministry of Finance points out the significant benefits that could potentially

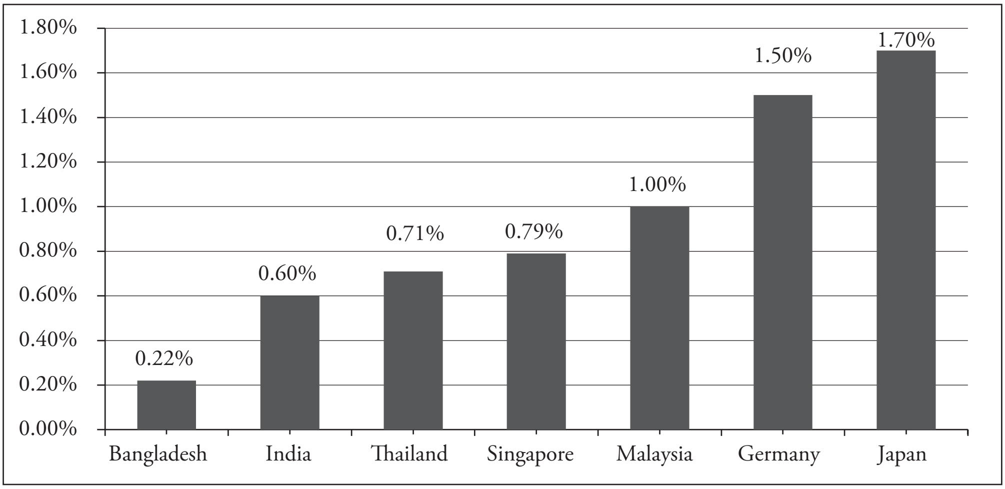
[14]Bangladesh graduated from *low-income country* (LIC) status to *lower middle income country* (LMIC) status in 2015 (according to WB's income category). The country is slated to graduate from LDC to (non-LDC) developing country (which is a UN category) in November, 2024.

Figure 3: High Dividends From Investing in Raising DRM



Source: Medium Term Macroeconomic Policy Statement: 2023-24 to 2025-26, MoF

Figure 4: Cross Country Comparison of Costs per BDT 100 Tax Raised



Source: Medium Term Macroeconomic Policy Statement: 2023-24 to 2025-26, MoF

accrue from investing in various measures to raise DRM. The report shows that the cost of collecting additional revenue of BDT 100 is comparatively lower in case of Bangladesh (Fig.3): for direct tax, this was BDT 0.21, and for indirect tax the corresponding cost was BDT 0.13, while for the overall NBR the amount was BDT 0.25. Fig. 3 also shows that the costs are declining over time (FY 2021 compared to FY 2020).

Fig. 4 provides information on a select set of countries in this regard. The data brings out that Bangladesh's costs are the lowest among various countries including India and Thailand, not to speak of developed countries such as Germany and Japan. This would mean that investing in NBR's modernisation, including in areas of deploying digital tools and overall digitalisation of the taxation system is indeed good value for the money spent.

Digitalisation Potentials of Raising Additional Revenue through

In Bangladesh, both tax elasticity (change in revenue to change in income) and *tax buoyancy* (reflecting efficiency and responsiveness of revenue mobilisation to growth in GDP/GNI) have been rather low. There is also widespread *tax avoidance* and *tax evasion*. Digitalisation could be a key vehicle to address the attendant challenges. This could play a crucially important role in broadening the tax net, and raising tax efficiency, and thereby enhancing tax elasticity and *tax buoyancy*. Digitalisation can help detect *tax avoidance* (e.g. by identifying the loopholes, rationalising deductions, exemptions etc.), and reduce *tax evasion* (e.g. by helping detect intentional deception to avoid paying taxes).

To note, the degree to which taxpayers engage in tax avoidance and tax evasion is influenced by several factors e.g. taxpayers' propensity of risk taking, severity of penalties that would be imposed if violations are detected, as also the state of overall governance in the concerned country. Dealing with these, however, is not a short term issue. What is argued here is that through *technical solutions* the concerned problems can be addressed, at least to a large extent, without being hostage to overall improvements in the state of governance. It must be conceded though that a comprehensive approach to modernisation of the taxation system, and overall good governance, are necessary for reaping maximum benefits and ensuring sustainability of any such technical solution.

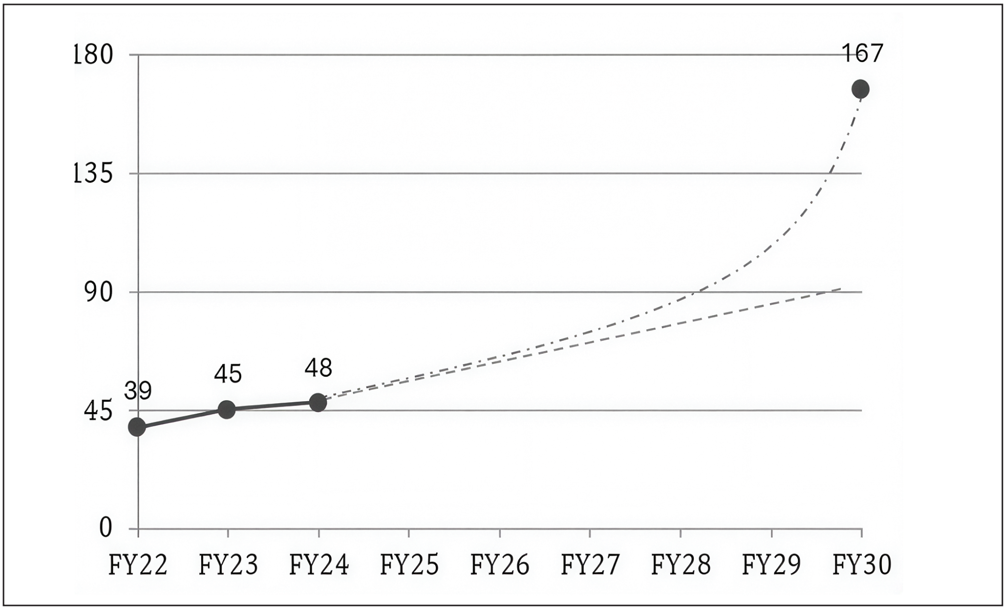
Table 4: Projections of Additional Tax Collection Through Introduction of e-filing

	Estimated Values [Billion USD]			
Indicators	**Year 1**	**Year 2**	**Year 3**	**Year 4**
Nominal GDP	481.4	538.5	603.9	652.2
Increase in revenue due to transition from no e-filing to mandatory e-filing in the country (5% of GDP) [Est.]	24.1	26.9	30.2	32.6
Increase in revenue due to transition to 25% of all taxes being filed online (1.2% of GDP) [Est.]	5.8	6.5	7.2	7.8

Source: Estimated based on assumptions gleaned from various sources.

Based on cross-country experiences, the study by IMF titled, "Exploring the adoption of selected digital technologies in tax administration: A cross-country analysis" makes an attempt to estimate the potential amount of tax collection through deployment of various digital tools. Drawing on this, Table 4 presents the projected revenue impact of e-filing in Bangladesh, for the period 2022 to 2027. The estimates are based on a number of assumptions based on insights from literature survey. The table first presents actual and projected values of the GDP (in Billion USD) for each year (based on trend growth rates). Two scenarios are then developed for purposes of estimation- a more significant impact in terms of additional revenue generated, originating from 100% coverage. The other scenario considers a modest coverage of 25%. Table 4 indicates that e-filings could help generate additional taxes to the tune of USD 32.6 bln. and USD 7.8 bln. respectively under the aforesaid two scenarios, in Year 4[15] . It is estimated that if in Y1 a coverage of 25% can be ensured, and subsequently in Year 4 this is raised to 100%, additional revenue earnings could see a rise of more than five-fold (from USD5.8 billion to USD 32.6 billion) over the corresponding period.

Figure 5: Potentials of Revenue Mobilisation Through Digitalisation (FY 2024 – FY 2030) (Billion USD)



Source: Estimated by authors for FY 2024 to FY 2030 based on information from IMF, 2023

The authors have carried out a second exercise where Bangladesh's potential revenue earnings were estimated based on insights and information extracted from literature survey. The results are presented in Fig. 5. The lower dotted line indicates the amount of revenue under the business as usual scenario i.e., considering the trend growth rates. The upper dotted line indicates the potential revenue earnings if the country's taxation system is fully digitalised. As the Figure indicates, in Year 6, revenue could potentially rise by as much as 85.0% than would have been the case under the normal (trend growth) scenario (from trend revenue earnings value of USD 90.0 billion to estimated value of USD 167.0 billion). As would be expected, the digitalisation scenario contrasts significantly vis-a-vis the business as usual scenario. The message is clear: through sustained digitalisation of the taxation system, Bangladesh could gradually raise revenue-GDP ratio significantly, most likely, to about 16% by FY2030[16].

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[15] With the NBR taking a number of energetic steps to encourage e-income tax submission (for FY 2023-24), as of November 10, 2024, the number of online income tax return filing crossed the 250 thousand mark (some 1.05 million taxpayers have completed registration for online income tax return filing using the e-return option).

[16] To recall, this ratio was to be achieved at the end of the 7FYP period i.e. 2020! But better late than never.

The budget for FY 2023-24 noted that the tax-GDP ratio will need to rise significantly to help underwrite the public investment which will be required for Bangladesh's sustainable LDC graduation and transition to a developed country (MoF, 2023b). It was also noted that implementation of various measures taken by concerned authorities have led to a 25 percent increase in the number of submitted income tax returns in FY 2022-23. However, despite the progress made, the number of tax returns submitted stood at about 3.2 million only. This was far below the potential number. As a matter of fact, this was also below the number of people who actually had tax identification numbers (TINs)[17]. The FY 2024-25 Budget stated that an increase in tax return submissions from among taxpayers who have the TIN is expected in foreseeable future thanks to the recently- introduced *Tax Return Preparer (TRP)* and *e-return* platform.

The Perspective Plan of Bangladesh 2021-41[18] aspires to raise the revenue-GDP ratio to 19.55 percent by 2031 and 24.0 percent by 2041 (GED, 2020). Also, the goal is to increase the proportion of direct taxes to over 50% of total tax revenue by 2041[19].

Strategies mentioned in relevant documents in view of the abovementioned ambitious targets included broadening the tax base, modernising VAT and income tax administration through computerisation, greater reliance on accounts-based audits, strengthening the professional and technical capacity of the revenue administration by taking advantage of digital technology and online filing, enhancing monitoring of potential taxpayers, dealing with tax evasion, and improving taxpayer services to increase compliance. These initiatives must also include deepening organisational and other reforms concerning revenue collecting agencies, introduction of non-intrusive inspection, installation of electronic fiscal devices, and automation of bond management. Digitalisation of the taxation system will need to play a central role in this backdrop.

It may be noted that digitalisation is not just a technical solution; it is also verification and analytics at the same time. Information constraints reinforce opportunities for tax avoidance and evasion (Jacobs, 2017). Digitalisation can help address these by improving verification of taxpayers' true economic outcomes by allowing fiscal authorities to link information across various components of the national tax system. This enhances possibility of detection of *tax evasion and tax avoidance*, thus strengthening the efficacy of tax enforcement. Implementation of more sophisticated tax system through digitalisation can help detection of tax avoidance. The determination of tax liabilities, contingent on various factors such as income earned over different periods and from various asset holdings, could play an important role.

17 Many TIN holders don't submit tax returns. There are about 12.0 million TIN holders, only about one-third actually submitted their tax returns. While about 2.88 lac firms are registered with Registrar of Joint Stock Companies (RJSC), only about 24.4 thousand companies (8.4%) submit their tax returns (Begum, 2025).

18 Generally referred to as *Bangladesh Vision 2041*.

19 Which currently stands at about 30% of total tax collection.

Section 4: A Review and Assessment of Tax Digitalisation Efforts in Bangladesh

Over the past several years, the GoB, Ministry of Finance and the NBR have taken a number of initiatives towards higher revenue mobilisation where efforts at modernisation and digitalisation of the country's taxation system have featured very prominently. However, when all these efforts are juxtaposed against the results achieved on the ground, the picture that one gets is far less than satisfactory. An NBR report shows that inspite of spending at least 1000 crore taka for digitalisation towards higher tax collection, majority of tax-related functions continue to remain stuck in archaic manual system. Only three of the key actions necessary for paperless tax system are currently in place- Electronic Tax Identification Number (e-TIN), Electronic Tax Return (e-Return) and e-Tax Office. The National Single Window (NSW) Programme, launched in 2017, is only now set to be operationalised (Hossain, 2025). Inspite of all the efforts, as was noted earlier, Bangladesh's revenue and tax-GDP ratios have not increased; rather, as noted, these indicators have slided downward in recent past years.

To introduce digital tools in Bangladesh's taxation system, and towards modernisation of the system, a number of programmes, initiated by the GoB and supported by various development partners, have been implemented at different points in time over the past years. The discussion here focuses on the followings: (a) a brief outlay of the various plans and programmes and (b) a critical assessment of the efforts undertaken.

4.1 Plans and Initiatives for Tax Modernisation

Milestones in NBR's Tax Modernisation and Digitalisation Efforts

Followings are some of the major programmes, plans, and initiatives undertaken over the past several years by concerned Bangladesh entities, with support from development partners, towards modernisation of the country's taxation system. The information is sourced from reports prepared by the World Bank, the Asian Development Bank, Implementation Monitoring and Evaluation Department (IMED) of the Bangladesh Planning commission, Ministry of Finance, Bangladesh and other relevant sources[20] .

Strategic Development Plan (SDP; 2005): The plan was launched in 2005 with a view to attain four objectives: (i) raise the Tax-GDP ratio, (ii) modernise tax administration, (iii) simplify procedures, and (iv) promote transparency and accountability in the taxation system (Chowdhury & Hossain, 2019).

Reforms in Revenue Administration (RIRA; 2008): Funded by the UK-DFID, this project was implemented in two phases with a view to assist the NBR to strengthen its capacity to administer legislation, particularly concerning direct tax and VAT. The project aimed to introduce sustainable administrative measures to increase revenue from direct and indirect taxes (Maxwell Stamp, Ltd., n.d.). Implemented with the help of Maxwell Stamp Ltd.,

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[20] At various points in time, these organisations have carried out assessment of programmes implemented by the NBR aimed at digitalisation and modernisation of Bangladesh's taxation system. This section draws substantially on their findings.

four key outputs were programmed as part of RIRA: (i) piloting modern and automated tax practices in the Large Taxpayers Unit (LTU); (ii) establishing an Inspection and Internal Audit function; (iii) improving management information systems; and (iv) strengthening human resources and professionalism in tax administration (Chowdhury & Hossain, 2019).

Management Information System of Taxation (MIST; 2008-09): MIST was geared to facilitating the work along the taxation chain (TechnoVista Ltd., 2018). MIST aimed to provide a *single-window system* for secure electronic document and information exchange among the various stakeholders in the taxation chain. The initiative aimed to reduce assessment time, improve data sharing, and strengthen fiscal management. MIST faced several problems including technical and design flaws, particularly because of the insistence on replicating physical tax notices digitally, misallocation of funds (e.g. unnecessary international trips) and others.

Tax Administration Capacity and Taxpayer Services (TACTS): This was a five-year project launched following RIRA which aimed at enhancing revenue collection from income tax by improving tax compliance, raising tax efficacy and broad- basing tax net (Chowdhury & Hossain, 2019).

Modernisation and Automation Project (MAP; 2005): MAP was launched to strengthen institutional capacity and improve efficiency of tax collection through extensive efforts at modernisation and automation.

Comprehensive Modernisation Plan (CMP; 2011-2016): Launched by the NBR, the plan aimed at bringing all components of NBR reform initiatives under one comprehensive plan with the hope of achieving the strategic goal of consolidating all efforts over the subsequent five years. NBR made an attempt to review and modernise both tax policy and tax administration. Nine strategic areas were identified for reforms to be implemented within a span of five years. These were: (i) Tax policy reforms; (ii) Integrated revenue management program-business process reform; (iii) Integrated revenue management program-automation of the tax processes; (iv) Redefining the status and regulatory power of NBR; (v) Restructuring NBR according to function and size; (vi) Strategic communication and taxpayer outreach, education and assistance; (vii) Enforcement improvement program; (viii) Human resources and institutional development program; and (ix) Infrastructure development program.

Strengthening Governance Management Project (SGMP; 2011-18): Financed by the GoB and the Asian Development Bank (ADB), the SGMP aimed to introduce online tax filing, digitalise tax returns, establish taxpayer information and service centres, increase connectivity, and introduce database management (ADB, 2020). The project was geared to achieving a number of outputs: increase the facility for online submission across all income tax offices, with a target of ensuring that three-fourths of large taxpayers do their filings online; make gender-disaggregated data publicly available; digitise Land Records Management; improve information access at Specialised Information and Service Centres.

BITAX Modules: Project intervention included such areas as online submission of annual income tax returns, digitisation of manually submitted returns, electronic assessment of returns, and online processing of tax clearance certificates. The project's activities also included other business functions such as registration, audits, appeals, tax holidays, and scrutiny processes.

VAT Improvement Programme (VIP; 2014-20)

Assisted by the World Bank, the VAT online Programme (VOP) aimed to strengthen the country's VAT administration and, to significantly accelerate automation of VAT processes. Project Components included the followings:

Operational Modernisation: Activities focused on (a) enabling high levels of voluntary compliance within the VAT system; (b) Putting in Place Integrated VAT Management: Develop distinct applications for different tax types and by adopting a commercial, off-the-shelf VAT administration system; (C) Institutional Strengthening and Capacity Building: Reorganisation of the VAT system functionally and provided training on iVAS (Integrated VAT Administration System) business processes; (d) Programme Management: This included coordination, administration, change management, taxpayer communication, and education; (e) Bangladesh Revenue Mobilisation Programme for Results: Implementation of VAT Improvement Programme (VIP) 2015-2021 (IEG Review Team, 2022).

The VIP had the following objectives:

(a) improve revenue mobilisation; (b) promote transparency in the VAT administration; and (c) adopt an automated Integrated VAT Administration System (IVAS) which was expected to raise the number of online tax filings and returns, as well as e-payments for all types of taxpayers [21].

The programme was comprised of the following four components:

Table 5: Four Components of the VAT Improvement Programme

1. Operational modernisation of the VAT Wing within the National Board of Revenue	**2. Introduction of an Integrated VAT management**	**3. Institutional strengthening and capacity building**	**4. Programme management**
• Registration, return processing, tax payments, taxpayer accounting and tax refunds; • Tax audits; • Collection and enforcement; • Tax appeals; and • Taxpayer services	• Develop individual software for income tax, VAT, and customs. • On March 4th, 2013, NBR opted for a web-based COTS VAT system. •	• Support reorganisation of the VAT Wing along functional lines and provide training for staff.	• Part 1: Focused on managing the implementation of the programme providing expert advice on programme management, IT procurement, financial management, and disbursement.

Table 5 contd.

[21] IVAS was also developed by FPT IS.

Table 5 contd.

1. Operational modernisation of the VAT Wing within the National Board of Revenue	2. Introduction of an Integrated VAT management	3. Institutional strengthening and capacity building	4. Programme management
	• VAT and Income Tax to share a common database using the new TIN. • System accessible to all VAT offices and related centres. • Tender required use of "Oracle", advised by World Bank, IMF, and IFC.	• Enable NBR VAT Wing staff to use the new integrated VAT system and adapt to new business processes. • Equip staff to handle changes in law, rules, and organisational structure due to new administrative processes and information technology introduced by the Program.	• Part 2: Aimed at supporting change management and implementing a comprehensive taxpayer communication and education programme to build support for the reform both internally and externally.

Source: Authors' visualisation from World Bank Report (IEG Review Team, 2022)

IVAS's objective was to ensure access to tax filing and return submission by all categories of VAT payers, and was geared to improving transparency in VAT administration. Currently, the iVAS encompasses 16 comprehensive modules[22]. These together cover a wide range of VAT management features, from basic registration to complex dispute resolution[23].

Customs Automation

As part of this programme, the government has taken steps to raise taxpayer registration by way of linking TINs with access to, and availing of, 38 types of government services[24] (IMF, 2023a).

PFM Action Plan (2018-2023): This was an initiative undertaken by the Ministry of Finance to modernise the taxation system. Several measures were taken as part of the programme. This was followed by the more recent PFM Reform Action Plan (2024-2028). A key objective of the revenue strategy under this plan was to strengthen effectiveness of revenue administration

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22 Tax Type, Registration, Case Management, Return Processing, Revenue Management, Revenue Accounting, Taxpayer Current Account, Refund, Non-Filing, Debt Management, Objection and Dispute Management, Taxpayer Enquiry, Document Certification, Audit and Risk Management.

23 However, as of now, only thirteen of the sixteen modules are in operation.

24 In certain cases (e.g. in case of tax deduction at source on the earned interest income), when TIN is not submitted, the rate of deduction is made at higher rates (at 15%, instead of 10%).

and increase tax collection through improved tax administration (MoF, 2023c). Achievement of these objectives would, however, hinge critically on digitalisation of the taxation system.

Some of the goals of the PFM Reform Action Plan 2024-2028 are the followings:

Goal 3: Develop and implement strategies for effective revenue administration.

Sub-activities: Prepare and Implement a Medium to Long Term Revenue Strategy (MLTRS) and update NBR Modernisation Plan; Strengthen revenue risk management capacity of NBR; Strengthen NBR capacity in such areas estimation of tax potentials, tax base analysis, analysis of tax expenditure, and revenue forecasting.

Goal 4: Strengthen capacity of data gathering, statistics and reporting, Increase tax collection through improved tax administration.

Sub-activities: Ensure harmonisation of taxpayer data and its sharing across various segments of the NBR; Develop and implement an internal audit manual and ensure its use in operation; Promote awareness among NBR staff as regards existing legislation concerning protection or whistleblowers; Organise peer-to-peer learning exercises and events; Strengthen NBR staff capacity in areas of tax administration; Introduce registration and filing of online VAT returns; Launch online payment system for VAT, Income tax and Customs together with an interface with the iBAS++.

ASYCUDA (Automated System for Customs Data)

ASYCUDA (Automated System for Customs Data) was developed by the UNCTAD as a computerised Customs Management System (NBR, 2023). Bangladesh Customs uses the latest version, *ASYCUDA World*, which integrates various customs management solutions to streamline business procedures. The system includes modules for electronic Customs Declaration, Automated Document Processing, Risk Management, Inventory Control, Transit Management, Tariff Classification, Valuation, and Statistical Reporting. Bangladesh Customs began digitalising with ASYCUDA 2.6 in 1993 which was, upgraded to ASYCUDA++ in 2003 for customs stations in Dhaka, Chittagong, and Benapole. This was further upgraded in 2013 to ASYCUDA World in 2013. Subsequent upgrades carried out in 2016 and 2021 have strengthened the system's capabilities. *ASYCUDA World is now operational 24/7* which has helped to consolidate real-time data into a centralised system to meet user demands and leverage updated technology.

National Single Window (NSW)

NBR launched the NSW project in 2019. The project's aim is to streamline and simplify import-export procedures. The work is to be completed by 2025 (Shikder, 2023). The project focuses on providing various certificates and no-objection certificates (NOCs which are necessary to carry out import-export activities) via a unified digital platform.

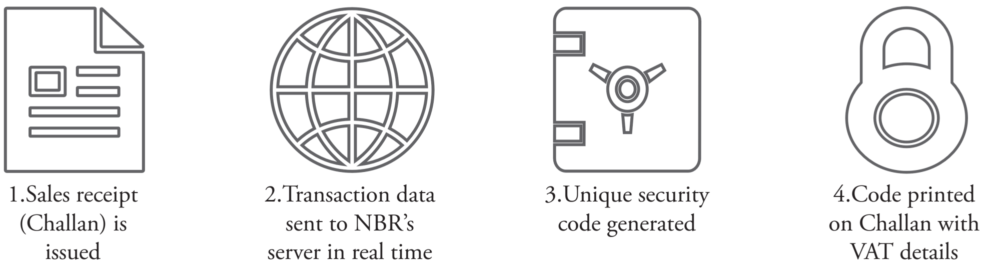
As of now, 39 organisations have signed MoUs with the NBR with a view to have robust interconnection with the help of seamless data exchange. The purpose is to ensure speedy trade process and facilitate expeditious release of goods. These are geared to boosting trade and raising operational efficiency.

Electronic Fiscal Device Management System (EFDMS)

EFDMS is a dual-based software system which facilitates management of transaction and ensures accountability in retail and wholesale sectors. The overall objective is to plug the leakages in taxation at retail level. The system consists of two key components: Electronic Fiscal Device (EFD) and Sales Data Controller (SDC) machines. EFDs are installed in businesses that do not have a software or Point of Sales (POS) system. SDCs are integrated with the existing POS systems. The objective is to raise revenue through a robust system of tax collection.

Both EFDs and SDCs are directly connected to the NBR's server and software which ensure transmission of real-time data as regards transaction details. EFDs are currently mandatory for 24 types of services although there is a long way to ensure effective compliance effective.

Figure 6: The EFDMS System



Source: Authors' visualisation From Revenue Conference 2023, NBR

NBR's earlier attempts to enforce the use of electronic cash registers had failed because of the absence of electronic servers to monitor transactions (WB, 2024). Taking cue from this, NBR decided to set up EFDs and SDCs in 2017. EFD scheme was launched on a pilot basis in August 2020. This has now been made mandatory for 24 types of shops and service providers.

Electronic Payment (E-payment)

The purpose of E-payment is to facilitate payment of customs duties by traders and other taxpayers. The system allows payment of income tax via E-payment and A-chalan (Shikder, 2023). E-payment enables payment of VAT and supplementary tariffs as well. This is part of an integrated system which is connected with various banks and these, in turn, are connected with the iVAS. The entire system is geared to enabling online tax payments. E-payment was made mandatory for all types of taxes in 2023. This was put in place in 2012 with the launching NBR-Sonali Bank e-payment portal primarily for purpose of payment of income tax (Mala, 2021). While the portal included the option for payment of other taxes, it failed to attract taxpayers because of various limitations. These included absence of the option for large payments and not allowing direct payments from bank accounts.

Electronic Tax Deduction at Source (e-TDS)

Launched in 2020, the purpose of the e-TDS was to facilitate automatic resolution of tax disputes and reimbursement of income tax paid in advance. The system is integrated with the e-return system with a view to facilitate seamless data exchange as regards tax deductions across various sectors (Islam, 2023). The system allows concerned agencies to deduct tax at source, prepare chalans online, and deposit funds directly into the state coffers. These can be done with the help of just a few clicks. It supports a variety of modern payment methods, including mobile payments, internet banking, and transactions via debit and credit cards. It thus promotes greater compliance and strengthens ease of tax administration overall.

At present, more than over 300 thousand authorised representatives provide TDS solutions to the country's taxpayers. TDS contributed to approximately 60% of all income tax receipts from July 2020 to June 2021. It is planned that the e-TDS technology will manage 50% of settlement of tax at source by 2025.

Document Verification System (DVS)

The DVS is based on a central database (MoF, 2023c). The system is geared to keep audit reports of all companies registered with the Registrar of Joint Stock Companies and Firms. Income tax officials are expected to match the audit reports with income tax returns of concerned companies. The system was expected to help detect tax evasion.

The DVS initiative of the Institute of Chartered Accountants of Bangladesh (ICAB) allows revenue authorities and other concerned regulators such as Bangladesh Bank, Financial Reporting Council (FRC), Bangladesh Securities and Exchange Commission (BSEC) and Insurance Development & Regulatory Authority (IDRA) to authenticate Financial Statements submitted by companies and firms[25] (Zaman, 2022).

Electronic -Filing (E-filing)

In September 2021, NBR introduced e-filing to streamline verification of taxpayer information online (Islam, 2023). The system allows retaining detailed accounts of income, expenses, assets, and transactions in a permanent database. This was intended to address the shortcomings. Approximately 207 thousand tax returns were submitted through the new e-filing system in FY 2023 (Moniruzzaman & Ashraf, 2023).

PFM Programme Support: The PFM Programme is supported by the European Union (MoF, 2023d). The Programme, which has a number of components, is geared to strengthening the operations of NBR and its institutional capacities. As part of the programme's technical assistance component, experts provided training and advisory services in several areas: taxpayer audit, risk management, litigation, and digital transformation to raise effectiveness of the tax administration.

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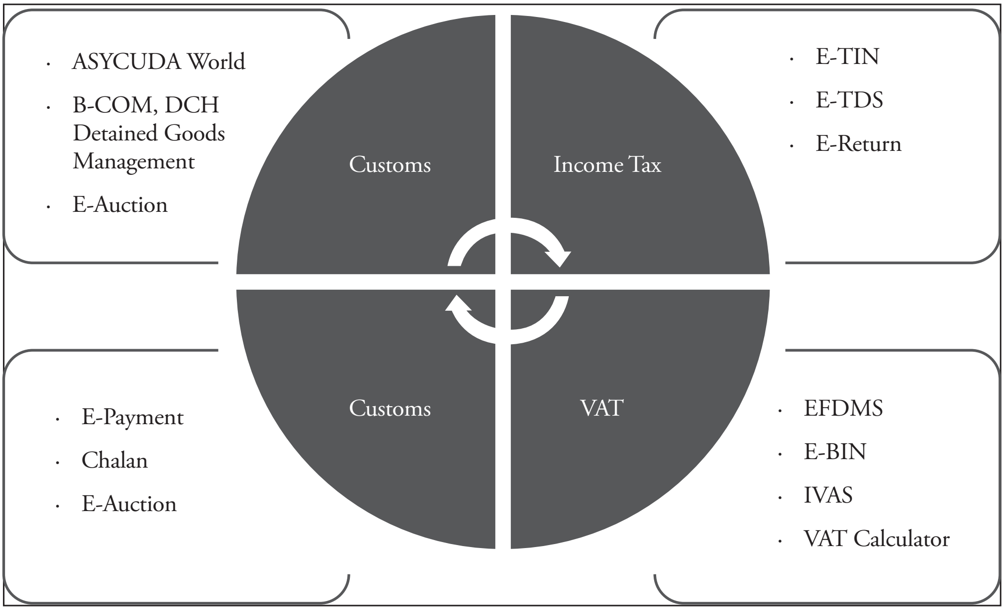
[25] On a welcome note, the number of audit reports signed by accountants (by securing codes from the DVS) rose to more than 38 thousand in 2021-22.

4.2: A Critical Assessment of Digitalisation Initiatives in Bangladesh

Figure 7: Digitalisation of Revenue Management



Source: Authors' visualisation from the NBR website

The outcomes of the digitalisation efforts in Bangladesh is captured in Fig 7. One finds the imprints of the efforts at digitalisation on all major components of Bangladesh's taxation system: Customs, Income Tax and VAT. These initiatives have no doubt eased the work of both tax authorities and taxpayers, albeit at varying degrees.

It goes without saying that, there is still a long way to go if Bangladesh is to draw the full benefits of digitalisation. This is corroborated by the discussion and estimations carried out by the authors which were presented in the preceding sections. These bear out that the gap between the current and the potential amount of domestic resource mobilisation through taxation and, through digitalisation of the taxation system, continues to remain very high in Bangladesh.

In presenting the Budget for FY 2015, the then Finance Minister had pointed out about the presence of largescale leakages in the taxation system, particularly with respect to collection of VAT[26]. The situation has somewhat improved over the recent past years thanks to a number of steps taken by the NBR. However, a lot more needs to be done. The estimations carried out by the authors reinforces this. According to the World Bank, there is potential to triple VAT collection if policy gaps are bridged and compliance issues are addressed effectively (WB, 2024).

[26] The Minister stated that while VAT in Bangladesh was collected from 400 thousand points, NBR received VAT only from 24 thousand points (which is only about 6% of the total collection points).

In view of the above, the following section undertakes assessment of the measures taken till now in the area of digitalisation, automation and modernisation of the Bangladesh taxation system.

Bangladesh Integrated Tax Administration System (BITAX)

BITAX, as noted earlier, was supported by the ADB. The Project Completion Report of the ADB rated the project to be overall successful (ADB, 2020). The project was assessed by the ADB as relevant, effective and likely sustainable, although less than efficient. However, a number of stakeholders, including the Implementation Monitoring and Evaluation Division (IMED) of the Planning Commission, disagreed with this view. According to these entities, online tax return system's acceptability remains limited, and there are also concerns about data security (IMED, 2020). The system, developed by FPT Information System Corporation, allowed access from Vietnam via VPN which posed high security threats to national data. Repeated requests to FPT for creating secure and screenshot-based technical documents for BITAX management were ignored. This left NBR dependent on FPT. This also compromised national control over the country's tax data.

The existing disjointed system makes it rather difficult to share data among the three wings of the NBR: VAT, Customs and Income Tax. In the backdrop of the current practice of (primarily) manual operation and record keeping, tax administration finds it exceedingly difficult to coordinate its work involving the various components. Even where some digitalisation has taken place, it is not easy to coordinate the work, among the various components, as also within the same component. This is because interoperability of the various systems is at present mostly wanting. This will likely turn out to be a big challenge if the number of taxpayers was to be raised to 10 million over the near-term future, as is planned by the NBR.

Thus, the efforts at digitalisation are severely undermined due to lack of interface and coordination and a high degree of administrative fragmentation. While many countries have moved towards greater integration of tax administration, Bangladesh's administrative structure has remained unchanged, with separate Direct tax, VAT, and Customs Wings being in place[27] (WB, 2024). Lack of administrative integration and data sharing involving the three wings results in a high degree of inefficiency in NBR's operation and undermines the cause of revenue generation.

Failure to Handover System: FPT Information System Corporation, which developed the BITAX system did not hand it over to the National Board of Revenue (NBR) after the completion of the project in 2018 (Parvez, 2020). The service agreement with FPT ended in November 2019. Although NBR formed a team to take over the BITAX system, it was faced with non-cooperation from FPT. Surprisingly, the vendor was paid the total claim for the BITAX project in May 2019, before the system was fully handed over. This undermined FPT's accountability. The lesson to be drawn is that, while going for vendor selection it is necessary to carry out due diligence and before the final payment is made to the vendor, it must be ensured that all contractual obligations have been met. A system of accountability must be enforced in this regard.

[27] To recall, efforts to merge the cadre services did not succeed in the past because of resistance from the concerned officials.

VAT Improvement Programme

The World Bank-supported VIP significantly accelerated the automation of VAT administration in Bangladesh, notably exceeding its planned targets (IEG Review Team, 2022). The VIP was successful in bringing down the VAT refund processing times from 120 to 90 days, exceeding its initial target of 102 days. Over the programme period, VAT revenues increased annually by 15.1%, on average, reaching BDT 1.15 trillion in FY 2020–2021; this was above the projected target of BDT 914 billion.

NBR has developed 16 modules for the Integrated VAT Administration System (IVAS), of which 13 are currently operational. The NBR is yet to make policy decisions as regards the three partially completed modules which are yet to be 'live' (audit, risk management, and objection and litigation). This no doubt undermines the effectiveness of the system. Consequently, the expected revenue cannot be generated.

Sixty percent of large taxpayers are now submitting their returns online and are using e-payments through 11 commercial banks. The coverage is expected to rise when more banks are connected to the national payment gateway.

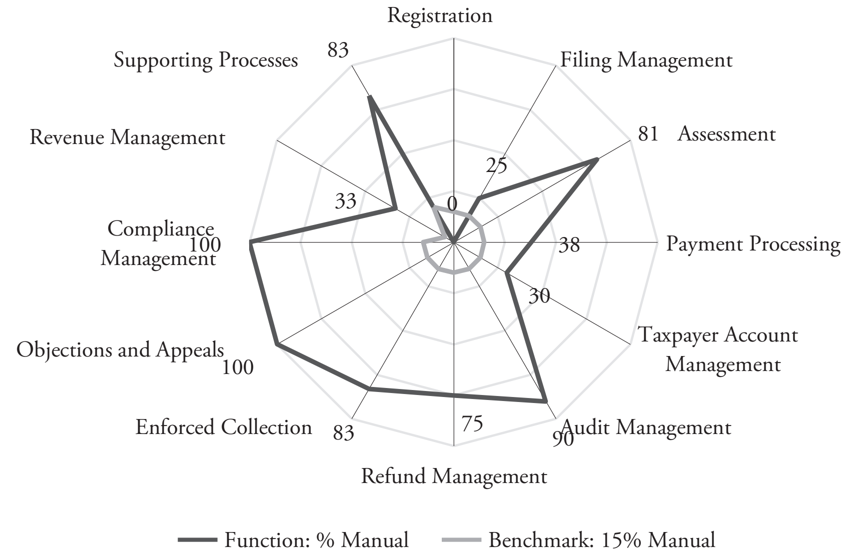
The World Bank has carried out a comprehensive assessment of the ICT application functionality of the various components of the Bangladesh taxation system (Grant, 2023). The exercise points out that in spite of NBR's various plans and initiatives a large gap exists between what should be and what actually is. A summary of the World Bank assessment is presented below.

VAT Division

The aforesaid exercise by the WB found that the Integrated VAT Administration System (iVAS) currently offers only 43% of the benchmark features. These primarily concern basic tax system components such as registration, return filing and payment. However, critical functionalities such as data analytics, risk management and workflow management still remain unavailable. Consequently, automation of basic tax processes and taxpayers compliance continue to remain limited and NBR's monitoring and enforcement remain weak.

Because of the significant gaps in the iVAS functionality, the system, as per the World Bank assessment, operates more like a mere basic bookkeeping system, providing only a minimal support to the NBR staff for monitoring taxpayer compliance. The system does not alert officials about non-compliant behavior and does not help manage activities to ensure compliance. Additionally, iVAS lacks a risk management component, crucial for modern tax administration, to identify potential non-compliance and also to efficiently allocate limited resources. Although iVAS has the technical potential to expand significantly beyond its current capabilities, only the deployment of new functionalities will not be adequate to serve the purpose, without corresponding changes in internal procedures which should shift focus from routine operations to proactive compliance and enforcement activities based on well-identified risks.

Figure 8: Share of Manual Effort to Complete Function (Balance by ICT System)



Source: Technical Assistance Report, World Bank (2023)

The World Bank review reveals that NBR's users of the iVAS system feel that the system eases only 38% of their respective current workload. Analysis of the perceived activities performed by iVAS is represented by the blue line in Fig. 8. In an advanced implementation of a tax administration software solution, it should be taking over about 85% of the workload (in other words, as manual processing performing 15% of the tasks). The World Bank analysis reinforces the conclusion of the iVAS functionality analysis which states that iVAS information is being supplemented with significant manual processing to meet NBR's operational requirements. This raises NBR's staff time for required enforcement, compliance and management monitoring activities (Grant, 2023).

EFDMS

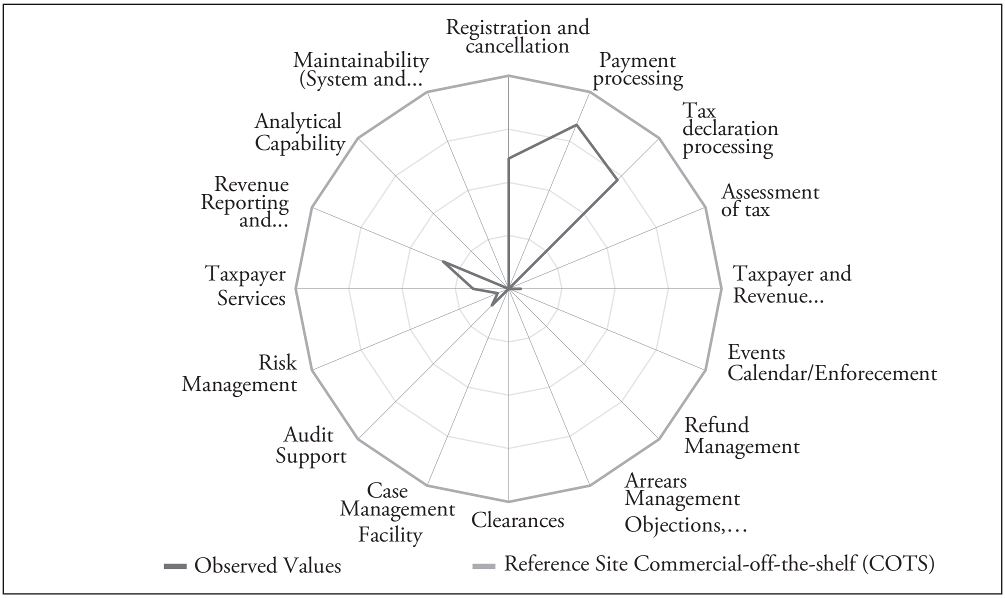
As was noted, the current plan is to install 60 thousand EFD/ SDCs in the first phase of implementation. If successful, 300 thousand machines should be installed over a five-year period (MoF, 2023a). However, to date (at the time of this writing), only 9,270 EFD/SDC machines have been installed. Selection of unsuitable firms for EFD installation was a major problem. The work of the consortium involving China-based SZZT and Synesis IT, was found to be not up to the mark (Noyon, 2023). This resulted in significant delays and inefficiencies which was compounded by the COVID-19 pandemic. Financial constraints also further stalled the progress. There is notable reluctance among traders to adopt EFD, primarily to evade taxes. The NBR has revised its strategy and has now adopted a *Public-Private Partnership* *model*.[28]It has signed an agreement with Genex Infosys to expedite the installation process with a revised target of installing 30 thousand EFDs and Sales Data Controllers by the end of FY 2023-24 and set a target of installing 60 thousand EFDs annually over the next five years. Currently, less than 10 thousand companies are listed as having installed EFD/SDC. The disparity in EFD adoption has created an uneven competitive landscape where businesses not having the machines are being able to undercut those that do. This disincentivises adoption of the machines. Concerned experts are advocating for a comprehensive area-wide deployment to ensure fairness and effectiveness in tax collection.

Direct Taxes

Limited Features of Direct Tax Solutions: Currently, Direct Tax solutions only provide 12% of the features set by the benchmark, focusing mainly on core tax system components such as registration, return filing, and payment, without advanced functionalities such as data analytics, risk management, and workflow management (Grant,2023).

Insignificant Impact on Workload Reduction: NBR's users are of the opinion that Direct Tax solutions assist with only 27% of their workload. This would indicate that the system primarily offers only the basic bookkeeping functions. This limits the staff's ability to engage effectively in view of enforcement, compliance, and management and monitoring activities.

Figure 9: Direct Tax ICT Application Functionality Compared to Benchm



Source: Technical Assistance Report, World Bank (2023)

28 This is a revenue sharing model.

The blue boundary in Fig. 9 represents how much of the function is available in the currently deployed systems (i.e. the closer to the edge of the circle the better) and the red boundary represents the expected functionality provided by a tax administration which is fully modernised. As can be easily discerned from Fig.9, the gaps between the two are significant. Much more will need to be done to reduce the gaps.

Customs Wing

Bangladesh's revenue from customs duty is higher than is the case for many comparable countries. Customs duties typically tend to come down as the national income goes up. Bangladesh collects more revenue from customs when compared to countries in similar economic situation, even after accounting for factors beyond the per capita income. In the prevailing NBR context, Customs wing is the most highly automated sector, with advanced support from the Customs ICT team and the ASYCUDA system (Grant, 2023).

The latest ASYCUDA World version, includes features such as Electronic Customs Declaration, Automated Document Processing, Risk Management, Inventory Control, Transit Management, Tariff Classification, Valuation, and Statistical Reporting. These provide an integrated customs management solution which is designed to streamline business procedures. The requisite human resources ought to be built to make use of the advantages of the system.

NBR Work Plan Towards Smart Bangladesh

The NBR has in the recent past Prepared a Plan in alignment with the vision of *SMART Bangladesh*[29] (Press Xpress, 2024).

Table 6: NBR Work Plan Towards SMART Bangladesh

NBR Plan to Implement SMART Bangladesh	Which Current Problem will be addressed	Expected results if the initiative is successfully implemented	Targeted Outcomes	Targeted Timelines
• Establish an interoperable system connecting all NBR systems with other concerned parties (BB, scheduled Banks, BEZA, BIDA, BEZA, Service providers, Land Ministry etc.).	• Service recipients will have access to technology-driven services. • Tax evasion will be addressed.	• Technology-driven monitoring, evaluation and control of income tax, VAT, customs and excise related activities.	• All information related to revenue collection will be available online.	Timelines: • 2025:25% • 2031: 50% • 2041: 100%

Table 6 contd.

[29]Earlier, Sheikh Hasina's government had planned to make a transition from Digital Bangladesh to SMART Bangladesh. However, what the NBR will do with the plan in view of recent developments (fall of Sheikh Hasina's government) remains to be seen.

Table 6 contd.

NBR Plan to Implement SMART Bangladesh	**Which Current Problem will be addressed**	**Expected results if the initiative is successfully implemented**	**Targeted Outcomes**	**Targeted Timelines**
• Putting in place tax return preparer (TRP) • Systems modernisation.	• Opportunities of greater tax mobilisation at individual and institutional levels.	• Net of revenue collection and tax coverage to be expanded.	• Ensure availability of reliable information on taxable income at individual and institutional levels.	Timelines: • 2025: 25% • 2031: 50% • 2041: 100%
• Gradually move to a cashless payment system through e-payment of customs, VAT and tax (Finance Division's A-Challan, BB's RTGS and other payment systems)	• Raise revenue earnings by promoting e-payment by taxpayers.	• Technological upgradation of resource management and through this management and through this enhancement of revenue income and reduction of tax evasion.	• Government exchequer will receive 100% tax via online and in real time.	Timelines: • 2025: 25% • 2031: 50% • 2041: 100%

Source: Press Xpress, 2024

As was noted, the NBR has implemented many Plans in the past towards automation and modernisation of the country's taxation system. However, these could not achieve the desired results in terms of raising the revenue-GDP ratio. There ought to be a difference this time.

The NBR plan has three components:

(a) Embedding technology-driven solutions in all NBR activities (allocation, assessment, monitoring); (b) ensuring human capacity building of all NBR personnel including those working at field level; and (c) preparing smart content and 360° dissemination strategy by creating awareness and behavioural change of taxpayers.

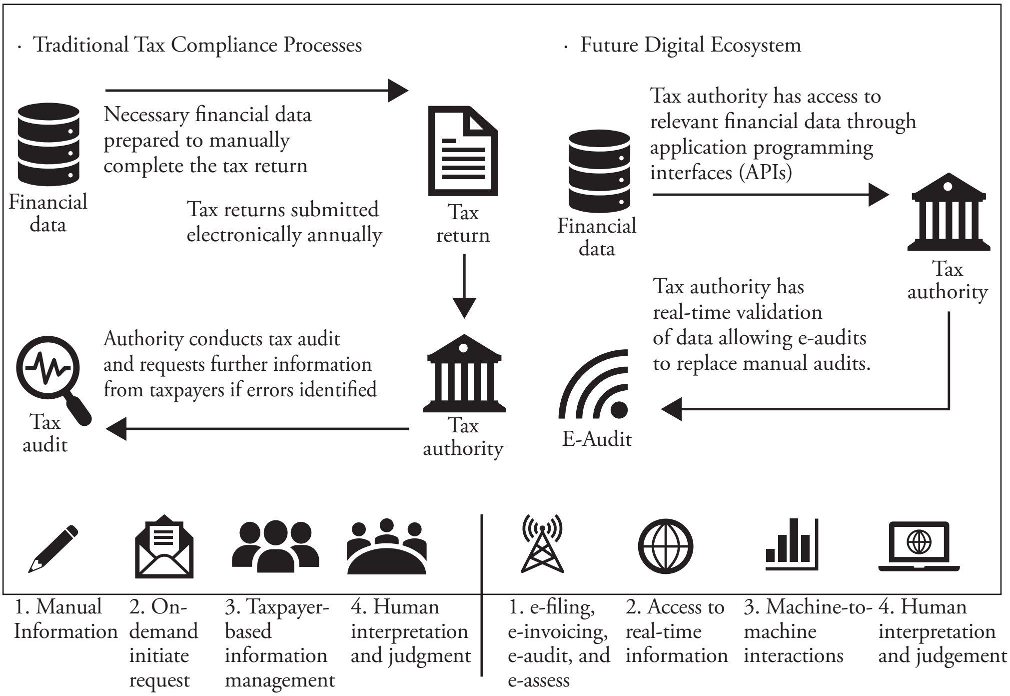
If and when this plan is fully implemented, Bangladesh's move towards digitisation of the taxation system will have reached a critically significant and transformative milestone.

In view of the above, the followings will be important: Comprehensiveness of digital solution[30] by putting in place a fully digitalised VAT system; interoperability of systems (by ensuring systems integration); data analytics and identification of red lights (to detect tax avoidance); cooperation with cross-border relevant agencies (through exchange of tax-related information).

[30] The digitalised VAT system is yet to have three key components in place, as was noted earlier. This undermines comprehensiveness of the measures taken and delivery of the expected results.

4.3 Moving forward the Frontiers

Figure 10: Comparison of Tax Administration 1.0 Compliance vs. Tax Administration 3.0 Administration

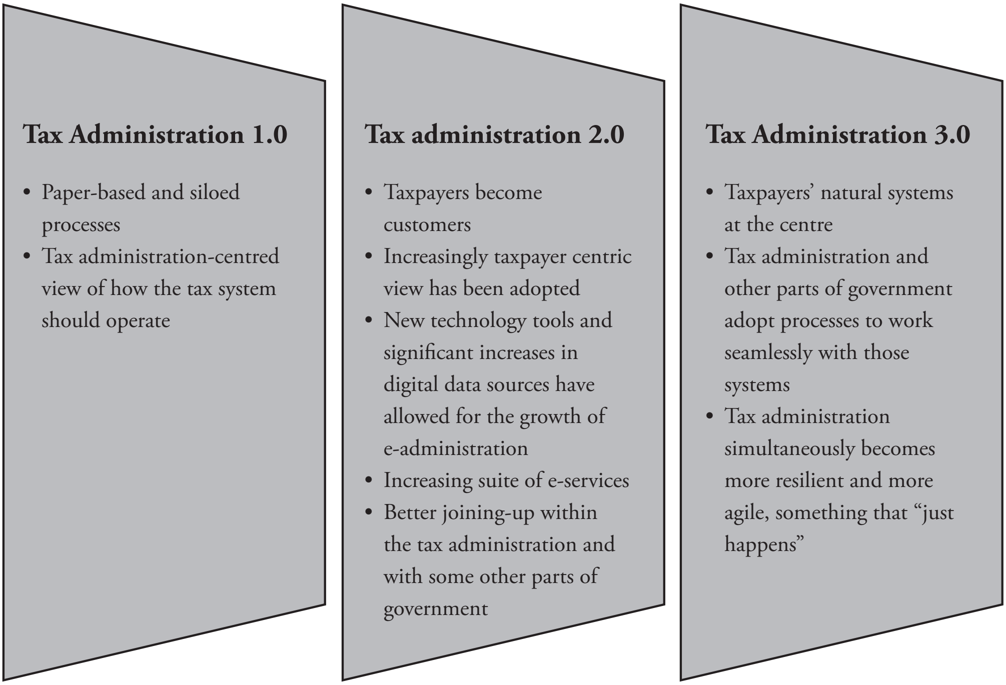


Source: ADB (2022)

In spite of many efforts at automation, digitalisation and modernisation, Bangladesh is yet to approach the frontiers in this backdrop. Literature survey carried out for the study shows that several hurdles will need to be overcome to make the transition from the traditional to the modern taxation system. Fig. 10 captures some of the key elements that differentiate the two systems with respect to management of financial data, conduct of tax audit and overall tax ecosystem.

Literature survey testifies to several stages that need to be crossed in moving towards the digitalisation frontier. Various studies point to three waves in view of digital transition and transformation. These are depicted in Fig 11.

Figure 11: Stages of Digitalisation



Source: Source: ADB (2022)

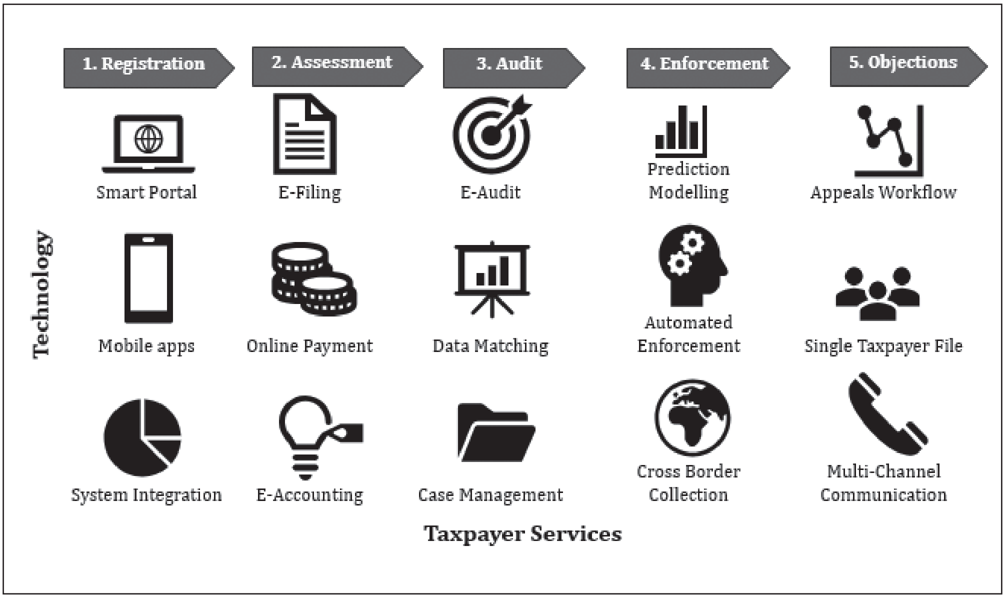
First Wave: *Digital Transition*: Shift from paper-based system to digital storage of tax information. Tax returns could be e-filed, auditing automated, and data quality improved in view of this stage. Bangladesh is still in the first stage.

Second Wave: *Consolidation and Efficiency*: Integration of advanced technologies- tax administration begins using basic analytics and data warehousing e.g. pre-filled tax returns and interface with personalised dashboards such as pension/social security.

Third Wave: *Optimisation and Autonomy*: Focus shifts to allowing systems to self-optimise using technologies such as machine learning and deep neural networks. Direct Control of tax authorities on specific process is reduced progressively. Decisions are data-driven and automated.

Not all countries go through, or indeed, need to go through, these stages sequentially. Some countries which have taken measures towards modernisation in more recent times are skipping some of the intermediate stages and sub-stages. As a matter of fact, within a particular country, various areas of taxation can also be at different stages of automation. Cross-country experience indicates that some of the relatively less developed countries have been able to overtake their more advanced peers in terms of adoption of modern tools of taxation (e.g. Kenya which has introduced widespread use of mobile phones for purposes of taxation). As far as digitalisation is concerned, technological leapfrogging is a possibility and an option that should to be pursued in all earnest.

Figure 12: Technology Associated with End-to End Tax Administration Cycle



Source: Source: ADB (2022)

The OECD Forum on Tax Administration (FTA) has conceptualised digital transformation journey of tax administration by sketching the starting point, in-between stages and aspirational endpoints. This is depicted in Fig. 12.

Fig. 12 shows that an advanced digitalised system needs to have the following features and advantages:

Features

- Data-driven (e.g. big data flows are handled by using data analytics, AI etc.).
- Technology-supported (e.g. big data is processed efficiently with integrated technology).
- Embedded flexibility.
- Expanded digital taxpayer services (e.g. intergovernmental service integration).
- Specialised services (e.g. Large Taxpayers Unit; global compliance assurance).
- Future-proofed (digital solutions remain viable and evolve with future demands).

Benefits

- Reduced compliance burden.
- Lower tax evasion and tax avoidance.
- Higher revenue mobilisation.

The next section offers a set of recommendations to expedite the process of modernisation of Bangladesh's taxation system

Section 5: Going Forward Towards a Modern Taxation System

Drawing on cross-country experience, and the possibilities offered by what has already been achieved in terms of digitalisation of Bangladesh's taxation system, and in view of what can be done if policymakers are serious about this, Bangladesh will need to take a number of steps in going forward. Based on the discussion in the preceding sections, a set of recommendations is presented here which concerned policymakers may consider as part of the strategy to raise Bangladesh's tax-GDP ratio through modernisation, automation and digitalisation of the country's taxation system.

Develop a Strategic Digital Transformation Roadmap

Prepare a roadmap for comprehensive digital transformation. This should include phased goals, expected outcomes, and realistic timelines. This roadmap should align digital tax initiatives with broader economic and technological policies. The idea is to ensure coherence and guarantee support from concerned stakeholders. The digital strategy should be unified in such a way that all elements of the tax system are well-integrated. This should be a well-defined system that links all digital initiatives and avoids a siloed system. This strategy should also outline the infrastructure needed to support data collection and analytics.

Consider Implementing the NBR's Work Plan[31]: As noted earlier, the NBR had previously formulated a plan titled NBR Work plan Towards SMART Bangladesh. This plan has several specific timeline-wise targets. The plan has three components: embedding technology-driven solutions in all NBR activities (allocation, assessment, monitoring); Human capacity building involving all NBR personnel including those working at field level; preparing of smart content and 360° dissemination strategy by creating awareness and behavioural change of taxpayers. The plan, if and when implemented, should contribute significantly to digitalisation of the tax system in Bangladesh. However, it is reckoned that the timelines presented in the plan are not ambitious enough. The deliverables under many of the components should be brought forward if the DRM targets are to be achieved. This is also particularly needed in view of meeting the targets set for release of the IMF loan. Concrete initiatives will be needed in several areas: (a) investment in building the necessary digital infrastructure; (b) investment in human resource building; and (c) ensuring accountability in implementation and delivery of outputs.

Ensure Interoperability of Systems: This is also mentioned in NBR's Master Plan 2024. It is crucial to have better coordination among concerned agencies and to detect tax evasion and address tax avoidance. Interoperability will help to integrate the operations of all major NBR activities involving customs, VAT and income tax. Establishing connectivity with banks will also be necessary. Towards this, maintaining consistency of software is a must. This will help ensure interoperability of various components of the taxation system. Disparate and disintegrated development of digitalisation, a common feature of Bangladesh's taxation system

[31] The Interim Government and the newly constituted NBR will now need to decide whether, and to what extent, to implement the plan. Design of a new plan may also be on the card. However, what cannot be denied is the need for energetic steps and concrete measures towards digitalisation and automation of the taxation system.

till now, act against the requirements of smart taxation system. Digital Software Providers (DSP) will need to be provided with application programming interfaces that allows the providers to build functions that tax officials then can access via their systems (OECD, 2021). This way, DSPs will be able to build interfaces in their software which would allow tax agents to access tax-related information from a diverse range of sources.

Put in Place Broad-Based Automation: Achieving efficient and broad-based automation will be crucial to attaining the goal of digitalisation of the country's taxation system. An automated system that is easy to use for taxpayers and able to fill the loopholes in the system is a crucial step to prevent tax avoidance and corruption. The automated system should be able to identify individuals and businesses that are registered in the system but are not submitting returns and those who are registered and submitting returns but are not paying their due share of taxes. As far as income tax was concerned, activities such as filing of returns, processing of returns, assessment of total income, computation of taxes, and payment of taxes, need to be fully automated. Such an automated system should be able to identify individuals and businesses which are registered in the system but are not submitting returns and those that are registered, and submitting returns but are not paying their due share of taxes. In terms of income tax, activities such as filing and processing of returns, assessment of income, computation of taxes, and payment of taxes, need to be automated and be linked to the taxpayers' national identity numbers (NID). Ideally, tax authorities should be able to collect and verify the information of each taxpayer with minimum effort. The software should sustain uploading of all necessary information. An important aspect in this regard relates to the design of the reporting requirement form. This should be simple and user-friendly. The system should be so designed as to require only input data with the system performing the calculations. Ideally, tax authorities should be able to fetch and verify the information of each taxpayer with minimum effort. There will be a need to properly incorporate old data into the new system although this is not an easy task. The system ought to be future-proofed. Future-proof means that it is important to ensure that technology implemented will support future requirements. For example, such a system should enable proper deployment of data and knowledge to drive informed- decision making.

Expeditiously Implement National Single Window: The NSW was supposed to be rolled out in early 2024. Implemented by the NBR, the NSW is expected to expedite the process of export-import business significantly, thus facilitating processing of trade transactions and thereby cutting costs and helping to earn more revenue.

Ensure Reconciliation of Expenditure Information with Income Data: Smart taxation system can help boost DRM if expenditure record and income tax submission are integrated under one system. Record-keeping of expenditure with help of the NID could be a possibility in this regard. This would be something akin to Aadhar system of India. The Aadhar number is linked to a host of services including mobile sim cards, bank accounts, land registration, vehicle registration etc. (Bhattacharya & Anand, 2018). From 2021, India has made it mandatory to submit one's Aadhar number when submitting tax file (by using PAN-Personal Account Number). Such an integrated system will allow tax officials to compare income tax statements with expenditure patterns and behaviour, and detect tax avoidance and tax evasion and thereby help boost DRM.

Deploy Data Sciences and Analytical Tools: This concerns application of statistical and machine-learning techniques to uncover insights from data towards better tax management and taxpayer compliance. Such a system allows dealing with structured and unstructured information, on a real time basis, with help of big data analytics. Data analytics for identifying revenue risks will need to be widely deployed. All these will require NBR to develop highly skilled human resources that are adequately equipped to use the tools. At some point, advantages of Artificial Intelligence (AI) will need to be brought into play if the digitalisation system is to be truly smart and modern. AI is defined as the ability of machines and systems to acquire and apply knowledge, including carrying out a range of cognitive tasks (e.g. pattern recognition, learning, making decisions and predictions). Machine-learning, a sub-component of AI, can help NBR to detect deviation from expected patterns.

Take Measures to Provide Smart Taxpayer Services: Smart taxation system ought to ensure smart services for taxpayers that addresses their needs. The digitalised system will need to be geared to providing one stop information service for taxpayers through dedicated website and mobile applications. The system will need to have ensured encryption and authentication embedded in it. Malaysia's MyTax could serve as a useful prototype in this regard.

Undertake Tax Reforms in Tandem with Digitalisation: Returns from digitalisation are maximised when digital tools are deployed simultaneously with carrying out the administrative and tax policy reforms. In this case digital advancement is paralleled with reforms and modernisation of tax administration which include comprehensive changes in policy, and putting in place appropriate legislative frameworks, organisational design, governance structure and, business processes. These initiatives should be reinforced by proper human resource development including staffing and training. These ought to be sequenced properly to generate the expected dividends in the form of additional revenues.

Prepare the Workforce for Digital Transformation: The concerned workforce must be proactively involved in the digital transformation process, from planning to the execution stage. A well-designated training and capacity-building programmes should be developed to enhance digital literacy and technical skills of concerned human resources. Policymakers should give priority to the development of tax technology and data management skills within the tax administration. Action should be geared to imparting training to tax personnel for capacity building in areas of managing and making use of digital systems effectively. This is particularly so as regards big data management, risk assessment, and taxpayer services. Implementing targeted training programmes and partnering with international organisations for expertise and resources would be crucial in this backdrop.

Accelerate E-filing Adoption Rate: Raise e-filing adoption rate by undertaking awareness campaigns by highlighting the rewards of e-filing (e.g. greater convenience and faster processing times). Ask for mandatory e-filing requirements for certain taxpayer categories, which is a widely-practised norm. This will facilitate digital data collection which in turn will help undertake necessary steps for effective big data analytics and will contribute to process automation.

Facilitate Data Exchange: Put in place legal frameworks which support secure and efficient data exchanges between the tax authority and other regulatory bodies (e.g. company houses and stock exchanges). Such frameworks should be developed in such a way as to balance data protection needs with the operational requirements of the tax authority. The idea will be to enhance compliance and widen tax base by ensuring data security.

Invest in Infrastructure and Technology: Putting in place reliable and secure IT infrastructure to support digital initiatives would be critically important from the perspective of modernising the taxation system. This will entail not only upgrading hardware and software, but also ensuring that there is adequate and uninterrupted internet connectivity, both for tax authorities and taxpayers. Necessary investment should be made to enhance digital maturity of the tax administration which should be aimed at handling e-filing, data streaming, and other digital interactions. This entails advanced cybersecurity measures in order to protect sensitive taxpayer information. This is also important to ensure trust in the system.

Facilitate Taxpayer Inclusion and Participation: All taxpayers, regardless of their technological capabilities, should be able to participate in the digital tax system. In order for them to do so, digital interfaces should be simplified, mobile solutions should be provided where internet access is limited, and outreach programmes should be conducted to raise taxpayer literacy as regards benefits and advantages of digital tax services.

Improve Data Availability and Accessibility: Strengthen the ability of tax administration to access and make use of various data sources. This could entail formation of partnerships with relevant government agencies, financial institutions, and international bodies in particular for facilitating data sharing and systems integration. Highest priority should be given to robust data collection and putting in place management systems that can handle a diverse range of taxpayer information securely.

Enhance Governance and Transparency: Focus should be put on strengthening governance and establishing transparency in the tax administrations. This includes developing clear procedures and guidelines for digital tax operations in a way that will enable easy access by all concerned stakeholders. Trust of concerned stakeholders can be ensured and compliance can be strengthened if proper legal frameworks are in place to support digital transformation. The framework should ensure data privacy, and promote open governance.

Develop Transparent Regulations for Tax Incentives: Tax exemptions should be allowed through a system that is accountable and transparent. Standards here should be similar to the one for government expenditures. Guidelines for evaluating the necessity and feasibility of tax exemptions should include such factors as the status of development of particular sector, maturity of concerned industry, duration of the exemption, and rationale for its extension. Some countries have started to estimate and disclose revenue foregone consequent to tax exemptions (e.g. India). There is a need to put in place Sunset Clauses for Tax Exemptions which is of heightened importance to forestall abuse and ensure fiscal discipline. This approach sets transparent timeline as regards when any tax break would expire and adds predictability. This needs to be designed in a manner such as to discourage businesses from taking advantage of loopholes through restructuring and reorganising[32].

[32] Following expiry of the incentive period, some companies tend to reorganise under new names to enjoy the benefits of incentives such as tax holidays repeatedly.

Undertake Monitoring and Evaluation on a Regular Basis: Establish a system of ongoing monitoring and evaluation of all endeavours towards digital transformation. This includes setting up reference points and benchmarks for assessing success. This should be done on a regular basis. There is a need to be open to adjusting strategies as and when called for based on stakeholder feedbacks and technological advances and breakthroughs.

Implement the EFD Installation Plan Expeditiously: As was noted, there is a plan in place that sets the target of installing 300 thousand electronic fiscal device (EFDs) over the next five years, through public-private partnership. Timely implementation of this will need to be ensured. In implementing the phased EFD installation plan, it should be ensured that there is no discrepancy between those entities which installed EFDs and those that didn't. An area-specific plan should be drawn up in this connection.

Link Digitalisation Initiatives with Mobilisation of Additional Revenue Collection: It is evident from the preceding discussions that while many initiatives at digitalisation have been put in place over the past several years, their effects on Revenue-GDP ratio has not been tangible. There is a need to establish a direct causal relationship between the two. No doubt, some interventions are geared to improving taxpayers' experience and facilitating tax officials' performance. However, in the end, these should have positive impacts in the form of greater revenue mobilisation. Many initiatives are indeed targeted directly at strengthening tax collection efforts: by broadening the tax net, detecting tax avoidance and tax evasion, and through better coordination among various parts of the taxation system. However, as was noted, revenue generation impacts of all such initiatives have so far been rather limited. It is in view of this that there is a need to monitor, measure and ensure that tax digitalisation efforts generate higher tax income which, in the end, would lead to higher revenue-GDP ratio.

Bring Non-Resident Tech Giants into Income Tax Net: The NBR should ensure that non-resident entities such as Google, Amazon, YouTube, Facebook and others, which don't have their own offices in Bangladesh and operate with support of intermediate agencies, pay taxes in Bangladesh. Legal provisions enabling non-resident businesses to obtain TINS and submit tax returns in country of operation (in this case Bangladesh) need to be put in place through necessary amendments to the Finance Act and Income Tax Law. Bangladesh should also be proactively involved in Global initiatives (OECD) that aim to address the issue by putting in place a formula of apportioning the taxes on the revenues generated by these companies in various countries to those particular countries.

Deepen Cooperation Among Various Divisions of the NBR: NBR's digitalisation efforts have suffered because of lack of proper coordination among its various Divisions- Income Tax, VAT and Customs. Going forward, the current silo approach of functioning must be discarded, and there has to be greater inter-Division coordination. This will also be necessary to ensure interoperability of systems within NBR.

Ensure Political Buy-in: There are powerful blocs which are not interested in a digitalised taxation system that discourages human interface, has built-in mechanisms to capture tax avoidance and reduces avenues of corruption. These forces are likely to work to slowdown the digitalisation process. Accordingly, endorsement from the highest level and transparency and accountability in implementation of the digitalisation effort will be crucial to its successful implementation.

Take Care of Compliance with Bilateral and Multilateral fora and the WTO: The digitalisation plan must also take into cognisance the requirements of Bangladesh's trade, business and investment partners as part of various bilateral, regional and global commitments. Compliance with obligations in view of Bangladesh's membership in global organisations must also be ensured. For example, measures that will need to be put in place in connection with the end of the moratorium on e-commerce taxation which has been in force since 1998. The moratorium will end in March 2026 or 14th WTO Ministerial Conference.[33] Bangladesh should be prepared for this eventuality, and the NBR and its customs division should take this into consideration. Also, to note, WTO's Trade Facilitation Agreement obligates Bangladesh to make customs clearance trade- friendly. Such demands will rise further consequent to the country's upcoming LDC graduation[34]. Digitalisation should be carried out in such a way that obligations arising from regional and global agreements, having implications for taxation, can be flexibly incorporated into the taxation system.

Implement the Entire Spectrum of Digitalisation: Over the years, NBR, in partnership with various development organisations, was able to put in place some of the basic IT and digital infrastructure. However, the experience shows that if the entire spectrum of digital-human-institutional architecture does not work in tandem, these fail to deliver the expected outcomes in terms of higher DRM.

Ensure Database Software Consistency: Lack of coordination among the various initiatives by the NBR has emerged as a major problem in the context of making digitalisation effective. Implementation of the Direct Taxes solution has lacked a clear plan so far, particularly in areas such as database software consistency. While developing independent modules using outsourced resources, and later integrating them into a unified tax administration system is feasible, such an approach requires substantial preparatory work to establish the architecture and module requirements. Use of different database softwares across existing solutions complicates integration of these systems due to varied database software, programming languages, and user interfaces. It is thus critically important to develop an explicit and detailed plan to guide integration process effectively. For example, to improve effectiveness of the iVAS, additional data is a necessity. Such data is collected from transactions and third-party information sources, including direct taxes and external economic activity indicators such as energy use and banking information. All these will call for ensuring database software consistency.

Ensure Software Security: As is widely known, ransomware attacks are affecting organisations of all sizes worldwide. As a matter of fact, such attacks have been on the rise in recent past years. NBR's ICT department, with assistance from the Bangladesh Computer Council and other entities of the government associated with cyber security, conducts regular "Penetration Testing" on their public interfaces and internal systems. Given the expanded access to NBR's

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33 Whichever is earlier between the two.

34 WTO (2015)

systems by external developers and taxpayers via web services, the likelihood of a "supply chain attack"—where a compromised supplier allows attackers into NBR's network—or socially engineered attacks, is rising. Consequently, it is essential to build adequate in-house capacity and engage skilled human resources to conduct "grey box" penetration testing to assess both public and internal aspects of NBR's network security.

Strengthened Capacity Building: Government should prioritise strengthening of human resources to deal with digital tools and data management within the tax administration. This needs to involve training personnel to manage and take advantage of digital systems effectively, particularly in the areas of big data management, risk assessment, and delivery of taxpayer services. For example, a cadre of a VAT ICT staff trained in SAP programming is needed to enable NBR to continue localising and expanding iVAS functionalities and reducing reliance on external vendors. Implementing targeted training programmes and exploring the opportunities of partnering with international organisations for expertise and resources could be crucially important in this regard.

Take Advantage of the Ongoing NBR Reforms

Following the momentous student-citizen movement of July-August, 2024, an Interim Government has taken the responsibility of running the country. The Government has set up a number of commissions to prepare reforms in various areas. A commission has been constituted to come up with recommendations for reforms of the NBR. A proposal has been floated to separate policymaking and implementation functions of the NBR. The recommendations are expected to imbue renewed vitality to the NBR's work. Taking advantage of the aforesaid reforms, efforts must be put in motion to pursue the cause of full digitalisation of the country's taxation system most energetically and proactively. The urgency of this has also been emphasised in the report of the White Paper Committee set up by the Interim Government. In view of the tasks to be undertaken, and targets to be reached in areas of DRM, as part of the IMF loan (noted earlier), the emergent window of opportunity for automation, modernisation and digitalisation of Bangladesh's taxation system must be taken advantage of in all earnest.

Ensure Political Buy-in: For digitalisation programmes to succeed, political support must be guaranteed. If the highest political circles and top policymakers are not committed to pursue tax reforms, and are not ready to extend the necessary support, reforms in the revenue administration cannot be successful. Prichard et al (2019) observe, "There is now near-universal agreement that political hurdles are frequently the most important barriers to reform – and thus agreement about the importance of problem-focused political economy analysis to inform reform efforts. A problem-focused political economy analysis aims to provide a sophisticated assessment of the politics of reform that anticipates likely challenges – both inside and outside of tax agencies – and potential strategies for confronting them." The government which is expected to be in place in Bangladesh, following the anticipated elections and the upcoming democratic transition, will need to give highest priority to issues of modernisation and automation of the country's taxation system.

Concluding Remarks

The paper's key argument is that digitalisation of Bangladesh's taxation system could serve as a powerful tool in addressing the issue of the low revenue-GDP ratio that characterises the DRM scenario of the country. The paper has emphasised that raising the revenue-GDP ratio ought to deserve priority attention on the part of Bangladesh's policymakers because of the country's growing public and publicly guaranteed debt obligations, both domestic and external, with the consequent rapid rise in debt-servicing obligations. Higher DRM will enable the country to underwrite a larger share of the country's growing needs for public expenditure from its own resources.

Based on evidence on the ground, the paper has shown that in spite of the various initiatives and implementation of a range of programmes, over the past years, towards digitalisation and modernisation of the taxation system, such efforts were not able to generate the expected results in terms of higher revenue-GDP ratio. As a matter of fact, the indicator has suffered a decline over the recent past years. The paper's review of the country's various digitalisation programmes have identified a number of weaknesses which will need to be addressed if endeavours towards digitalisation are to deliver the expected results. Global best practices were reviewed to identify the gaps and provide pointers to what needs to be done in this regard. The review of cross-country experiences show that a comprehensive and holistic approach will be called for if digitalisation of Bangladesh's taxation system is to result in increasing tax efficiency and generate higher pace of revenue mobilisation and raise the revenue-GDP ratio. The paper shows that investing in digitalisation is good value for money. Estimates carried out for the paper indicates that the benefits of digitalisation for Bangladesh in terms of more revenue and increased revenue-GDP ratio could be highly significant.

Based on Bangladesh's past experience, and by drawing insights from the global experience concerning digitalisation and modernisation of taxation systems, the paper offers a set of recommendations towards a more comprehensively digitalised and modernised taxation system in Bangladesh. In this backdrop, the paper suggests that interoperability of various concerned systems, juxtaposition of expenditure track record with income tax information and leapfrogging in terms of adoption of technologies and digital tools are crucial to modernising the taxation system and, in the process, generating significantly high revenue earnings through taxation. The paper notes that in view of the NBR reforms being currently undertaken by the Interim Government of Bangladesh, there is a window of opportunity to pursue and advance the cause of modernisation of Bangladesh's taxation system. A revised, updated and realistic roadmap for digitalisation should be drawn up by the NBR, with feasible and concrete timelines for implementation of the roadmap, with concrete assigned responsibilities. The paper has argued that there has to be a political buy-in if taxation modernisation efforts are to continue and sustain once a newly elected government is in place in Bangladesh in foreseeable future.

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One of the key reasons behind Bangladesh's exceptionally low domestic revenue mobilisation is the lack of comprehensive and all embracing digitalization of the country's taxation system. This is not to undermine the importance of fiscal-institutional reforms, but to emphasise that digitalisation must be seen as a critically important component of Bangladesh's taxation system. While there have been many initiatives at digitalising the three pillars of the taxation system in Bangladesh-VAT, Customs and Income Tax-, the fact remains that Bangladesh's revenue-GDP ratio has indeed come down from about 11.0 percent about a decade back to about 8.0 percent in recent times. Against this backdrop, the present monograph undertakes an attempt to identify factors that inform the dismal track record as regards revenue mobilisation and low tax efficiency, and offers a set of policy recommendations to stimulate Bangladesh's tax efforts and strengthen its revenue mobilisation capacity. The paper draws attention to the findings from global literature that shows returns on investment in digitalisation of the taxation system is reckoned to be one of the highest in the particular case of Bangladesh. Taking into cognisance the lessons from Bangladesh's past experience, and drawing on global best practices, the monograph argues in a favour of developing a strategic digital transformation roadmap for Bangladesh that should include putting in place broad-based automation with embedded interoperability of various systems, ensuring reconciliation of expenditure information with income data, deploying data sciences and artificial intelligence-based frontier analytical tools, and undertaking measures to provide smart taxpayer services. The study also underscores the need for implementing comprehensive fiscal-institutional reforms in parallel with measures at digitalisation of the taxation system, with the objective of moving towards a system where 'tax just happens'.

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